

مجاناً ومحظياً

حمل الان

المطاعنة رمضان

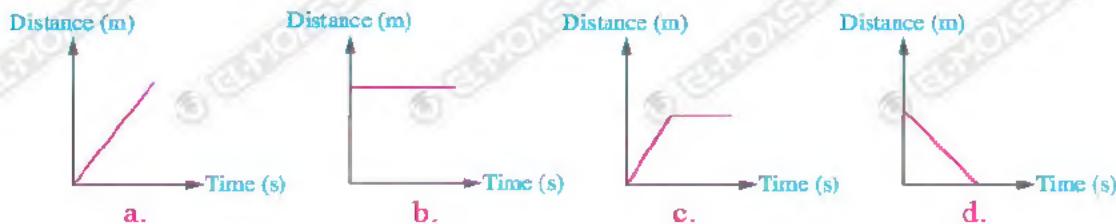
الشـمـاءـولـ

RaNia SaYed



Model Exam**1****Total mark****20****Answer the following questions :****Question 1** 5 marks**A Choose the correct answer :**

1. Which of the following (distance – time) graphs describes an object at rest ?



2. A body of 10 cm length is placed at the centre of curvature of the concave mirror, so the image length equals cm.

a. 5 b. 7 c. 10 d. 20

3. The mitotic cell division produces two new separate cells each one has the same number of chromosomes of the mother cell

a. N. b. 2 N. c. 3 N. d. 4 N.

B Give reasons for :

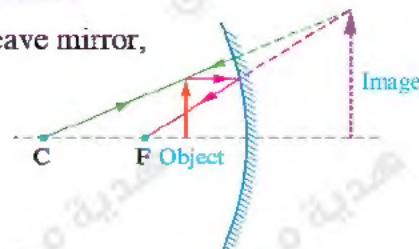
1. The continuous expansion of the universe.
2. Asexual reproduction in some plants doesn't need the presence of seeds.

C Study the opposite figure, then answer the questions below :

The figure represents the formation of an image by a concave mirror,

Answer :

1. Mention the position of the formed image.
2. Mention the properties of the formed image.

**Question 2** 5 marks**A Complete the following sentences :**

1. Spherical mirror that is used on corner of narrow road to monitor the movement of cars is called
2. The phase in which some important vital processes occur to prepare the cell for division is called
3. The far object can be seen clearly for the normal eye at a distance not more than metres.

B An object was put in the mid-distance between plane mirror and optical centre of (converge) convex lens its focal length equal (6 cm), the image formed by plane mirror at distance equals (12 cm) from the plane mirror.

Do as shown between brackets :

- Distance between the plane mirror and the optical centre of the lens equals cm.
(Complete)
- Length of the formed image by the plane mirror is (more than – less than – equal to) length of the formed image by the convex lens.
(Choose the correct answer)

C What are the results based on the following ... ?

- Increasing the distance between the planets and the Sun.
- Removing the nucleus from a living cell.

Question 3 5 marks

A Put (✓) or (✗) :

- Sometimes the ratio between the displacement and the distance for a moving body is more than the whole one. ()
- In 1796 the scientist Laplace published a research entitled world order included his perception about the evolution of the solar system. ()
- A person moved 40 metres to the north, then returned back 20 metres to the south, so his displacement is 20 metres to the south. ()

B A car starts moving from rest till its speed reaches 25 m/s in 10 seconds. Calculate the acceleration with which the car moved.

C Study the opposite figure, then answer the questions below :

- This organism reproduces asexually by
- This type of reproduction depends on cell division.



Question 4 5 marks

A Cross out the odd word :

- Acceleration – Force – Mass – Displacement.
- Moulton – Crossing Star theory – Chamberlain – Nebula.
- m/sec^2 – cm/sec – km/h – m/sec .

B Study the figures shown, then answer the following :

- In figure (1), what is the name of the structure indicated by the letter (x) ?
- In figure (2) what is the name of the phase that follows the phase that is shown in front of you ?

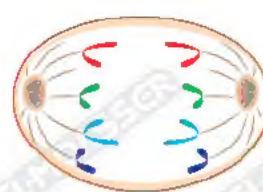


Figure (2)

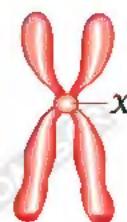


Figure (1)

C Determine the location of each of the following :

1. The solar system.
2. The principal focus of the convex mirror.

Model Exam**2**

Total mark

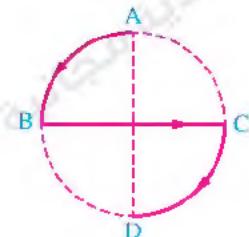
20

Answer the following questions :**Question 1** 5 marks**A Complete the following sentences :**

1. An object moves by regular speed when is equal to
2. A real image cannot be formed by a lens, mirrors and a plane mirror.
3. The bread mould fungus reproduces by, while the amoeba reproduces by

B In the corresponding figure, a body moves in a circular path with a radius of (7 metres) and its circumference of (44 metres) from point (A) to point (B), to (C) to (D) within (8 sec.) Calculate :

1. Average speed.
2. Velocity.

**C Compare by drawing only between metaphase in mitosis and metaphase (1) in meiosis.****Question 2** 5 marks**A Choose the correct answer :**

1. When an object with 6 cm length is put in front of a convex reflecting surface, and at a distance from it equals to its radius of curvature, then the length of the formed image is cm.
 - a. 4
 - b. 6
 - c. 8
 - d. 10
2. If the number of chromosomes in the somatic cell of a certain living organism is 44 chromosome, then its number in the reproductive cell for the same living organism is chromosome.
 - a. 22
 - b. 44
 - c. 66
 - d. 88
3. An object is placed in front of an optical piece, and its image is formed exactly at the position of the object, so the used optical piece is
 - a. concave mirror.
 - b. plane mirror.
 - c. convex lens.
 - d. concave lens.

B Write what do the following expressions mean :

1. The change in the speed of a body in one second.
2. Seeing the far objects clearly but the near objects are not seen clearly.

C What are the results of ...?

1. Galaxies move away from each other.
2. The speed of object increases by time.

Question 3 5 marks

A Write the scientific term of each of the following :

1. It is any straight line that passes by the centre of curvature of mirror and any point on its reflecting surface except the pole of the mirror.
2. It is formed in living organisms from cells known as reproductive cells through meiosis.
3. Special equipment used to study the Sun through its spectrum.

B What happen when ...?

1. Revolving speed of nebula around itself increased.
2. Focusing laser to Nano-molecules of gold present on the cancer cells.

C The opposite table shows the results of an experiment in which an object moves.

This object moves at

(choose and mention the reason)

1. Uniform deceleration.
2. Uniform acceleration.
3. Uniform speed.

Distance (m)	10	20	30
Time (sec.)	1	2	3

Question 4 5 marks

A Put (✓) in front of true statements and (✗) in front of false ones :

1. A train covers 200 km during 100 minutes, so its speed = 2 km/h. ()
2. Algae can reproduce by regeneration. ()
3. The stars explosion phenomenon is resulted from sudden nuclear reaction. ()

B "An Ovum of a female animal contains 8 chromosomes" find :

1. Number of chromosomes in a testis cell of this male animal.
2. Number of chromosomes in a sperm which produced from this male animal.

C What is meant by ... ?

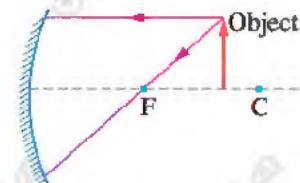
An object's displacement is 20 m in west direction.

Model Exam**3****Total mark****20****Answer the following questions :****Question 1** 5 marks**A Put (✓) or (✗) :**

1. The contact lenses are used instead of glasses by putting it on the eye retina. ()
2. During meiotic division, gametes are produced by special cells known as somatic cells. ()
3. By putting a source of light in front of a convex lens, the reflected rays are converged. ()

B Copy the following figure, then :

1. Draw the light rays that form the image of an object.
2. Mention the properties of the formed image.

**C What is the importance of each of the following ... ?**

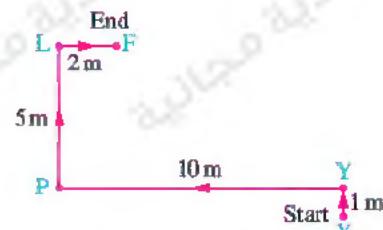
1. The gaseous line in the Crossing Star theory.
2. The nucleic acid DNA in the cell chromosome.

Question 2 5 marks**A Choose from column (B) what suits it in column (A) :**

(A)	(B)
1. Contact lenses	a. are used instead of glasses to treat vision defects.
2. The velocity of the wind	b. calculating the amount of fuel to complete the flight and save fuel.
3. Nano-molecules of gold	c. a method of reproduction in yeast fungus. d. to detect the cancer cells.

B The opposite figure shows the path of movement for two persons from the same starting point to the end point. Find :

1. The time of motion of the first person to take the path from (X) to (F) passing through the points (Y, P & L) with a speed of 6 m/s.
2. The time of motion of the second person to take the path (X) to (F) directly with a speed of 4 m/s.

**C Give reasons for :**

1. The mitosis (mitotic) division plays an important role in the living organisms life.
2. The moving car with a certain speed seems to be at rest to the moving observer with the same speed and same direction.

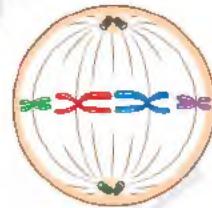
Question 3 5 marks

A Choose the correct answer :

B The opposite figure represents one of the phases of the cell division:

Complete :

1. The name of this phase is
2. This phase belongs to cell division.



C The following table represents a change of speed of a moving object by passing time :

Speed (m/s)	zero	3	6	9	12
Time (s)	zero	1	2	3	4

1. Draw the graphical relation between speed on (Y) axis and time on (X) axis.
2. Calculate the acceleration of this moving object.

Question 4 5 marks

A Correct the underlined words :

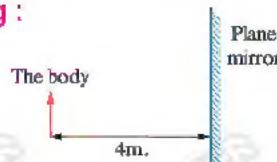
1. The simplest type of motion is the motion in curved line.
2. A plane mirror is placed to the right and left side of the car driver.
3. Nucleolus and nuclear membrane disappear at the end of anaphase of the mitotic cell division.

B Mention one example of each of the following :

1. A living organism that reproduces by regeneration.
2. Type of mirror which forms an upright, equal and laterally inverted image of the body.

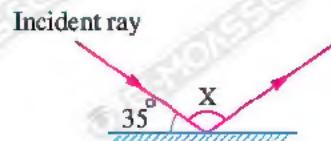
C Write the number which indicates (refers to) each of the following :

- The distance between the position of the body and the position of its image in the figure shown in front of you when the mirror approaches towards the body a distance equals 1 metre (one metre).
- The number of produced cells from the mitosis (mitotic) division of a somatic cell once.



Model Exam**4****Total mark****20****Answer the following questions :****Question 1** 5 marks**A Choose the correct answer in each of the following :**

1. In the opposite figure, a light ray falls on a plane mirror so the value of angle (x) is
 a. 35° b. 110°
 c. 55° d. 70°
2. A static car its speed became 32 m/s after 8 seconds, so the acceleration of motion equals m/s^2 .
 a. 4 b. 0.25 c. 8 d. 24
3. The ratio between the velocity of a body moved with a speed of 72 km/h and the velocity of a body moved with a speed of 20 m/s is
 a. 3.62 b. 1 c. 0.28 d. 2

**B An object was placed at a distance of (3 cm) from the optical centre of a lens, then upright, magnified image was formed.**

1. What is the type of the lens ?
2. Show by drawing the path of the rays forming the image.

C Mention one example of each of the following :

1. A disease that infects the older person's eyes which needs a surgical intervention for its treatment.
2. Using Nanotechnology.

Question 2 5 marks**A Put (✓) in front of true statements and (✗) in front of false ones :**

1. It is said that the object that moves at a constant speed moves at a uniform acceleration. ()
2. The scientist who established the Crossing Star theory is Fred Hoyle. ()
3. The speed of the car can be identified directly by using the compass. ()

B An ovum of an animal contains 16 chromosomes, determine each of the following :

1. Number of chromosomes in the liver cell in this animal.
2. Number of chromosomes in the sperm in this animal.

C What are the properties of image that is formed when ...?

1. A child stands in front of a convex mirror.
2. An object is placed at a distance from a concave lens.

Question 3 5 marks

A Write the scientific term of each of the following :

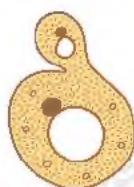
1. Special organs for reproduction in algae and fungi produce spores.
2. The process of exchange of genes between the two inner chromatids of the tetrad and distributing them randomly in the gametes.
3. The distance between the focus of the concave mirror and its pole.

B Give reasons for :

1. The image formed by convex mirror is always virtual.
2. The sexual reproduction produces different individuals.

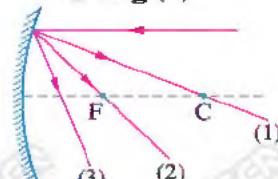
C Study the following figures, then answer :

Fig. (1)



Yeast fungus reproduces asexually by

Fig (2)



The reflected ray take the path number

Question 4 5 marks

A Correct the underlined words in the following statements :

1. The spindle fibres in the plant cell are formed during cell division from the centromere.
2. The cell is prepared to enter the phases of mitosis division and the genetic material duplicates in prophase.
3. If the angle between reflected ray and reflecting surface is 140° so the angle of incidence equals 40° .

B The opposite table represents the relationship between speed and time for a moving object.

Speed (m/s)	5	10	20	30	35
Time (sec.)	1	2	4	6	7

Represent graphically the relation between the speed and time, then calculate the acceleration by which the body moves.

C Mention the following :

1. Name of the oldest theories that explains the origin of the solar system.
2. A mirror which its reflecting surface is a part of the inner surface of a sphere.

Model Exam**5**

Total mark

20

Answer the following questions :**Question 1** 5 marks**A Write the scientific term of each of the following :**

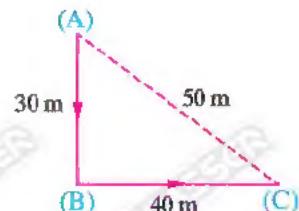
1. It is the change in the position of the object as time passes according to a fixed position.
2. It is the point that is in the middle of the reflecting surface of the mirror.
3. It is the displacement covered in one second.

B What happens in the following cases ...?

1. The crossing over phenomenon does not occur during prophase (I) in meiotic division.
2. If the body is put in front of a convex lens at a distance equals to the focal length.

C In the opposite figure :

If the object moves from point (A) to point (C) passing through point (B) in time of 10 sec. Calculate value of the velocity (write the used law).

**Question 2** 5 marks**A Correct the underlined words :**

1. Pilots take into consideration the average speed of the wind.
2. Euglena reproduces asexually by sporogony.
3. When the object moves by uniform speed, it moves by increasing acceleration.

B Compare between : Scalar physical quantity and vector physical quantity (according to definition).**C Show by drawing :**

Formation of an equal image for the object by convex lens, then mention the position of the image.

Question 3 5 marks**A Complete the following statements :**

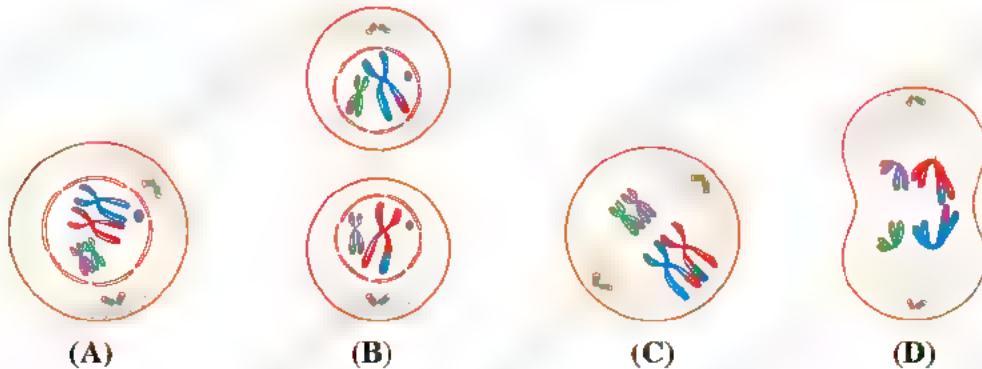
1. A car moves at a regular speed covers 300 metres in half minute, so its speed equals m/sec.

2. The upright and equal image is formed by
3. The Sun takes about to complete one rotation around the centre of the galaxy.

B Give reasons for the following :

1. The word AMBULANCE is written in laterally inverted way on the ambulance car.
2. It is practically difficult to a car to move with a regular speed.

C The following microscopic images illustrate the first meiotic division phases :



1. Identify each phase
2. Arrange these phases according to the priority of occurrence.

Question 4 [5 marks]

A Choose the correct answer :

1. A convex lens with a focal length of 50 cm, an object was placed at a distance of 80 cm from the lens, the image of the object is formed at a distance from the lens.

a. greater than 100 cm	b. equals 100 cm
c. equals 50 cm	d. equals 30 cm
2. The phenomenon of crossing over occurs in the of the first meiotic division

a. telophase	b. metaphase	c. anaphase	d. prophase
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3. If the angle between the incident light ray and the reflecting surface is 40° , so the angle of reflection equals

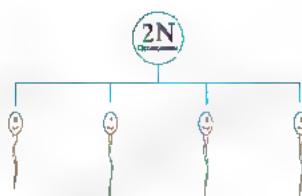
a. zero	b. 40°	c. 50°	d. 80°
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B What happens when ... ?

1. A light ray is incident by an angle 90° on a plane mirror.
2. A meiotic division occurs in the anther of a flowering plant.

C In the opposite figure :

1. It represents cell division.
2. The produced cell from the fertilization is called



Model Exam 1

1

(A) 1. b 2. c 3. b

(B) 1. Because galaxies move away from each other.
2. Because some plants undergo vegetative reproduction by the plants organs (leaves, roots and stems).

(C) 1. Behind the mirror.

2. Virtual, erect and magnified.

2

(A) 1. convex mirror. 2. interphase. 3. (6)

(B) 1. 24 cm.
2. equal to

(C) 1. Gravity decreases and planets move slower.
2. It can't undergo cell division.

3

(A) 1. (X) 2. (✓) 3. (X)

$$(B) a = \frac{V_2 - V_1}{t} = \frac{25 - 0}{10} = 2.5 \text{ m/sec}^2.$$

(C) 1. Regeneration 2. mitotic

4

(A) 1. Mass 2. Nebula 3. m/sec²

(B) 1. Centromere 2. Telophase.

(C) 1. In one of the spiral arms of Milky Way galaxy.

2. Behind the mirror

Model Exam 2

1

(A) 1. average speed speed at any time

2. concave convex

3. spores binary fission

$$(B) 1. Distance (AB) = \frac{1}{4} \times 44 = 11 \text{ m.}$$

$$\text{Distance (BC)} = 7 + 7 = 14 \text{ m}$$

$$\text{Distance (CD)} = \frac{1}{4} \times 44 = 11 \text{ m.}$$

$$\text{Total distance} = 11 + 14 + 11 = 36 \text{ m}$$

$$\text{Average speed} = \frac{\text{total distance}}{\text{total time}}$$

$$= \frac{36}{8} = 4.5 \text{ m/sec.}$$

$$2. \text{ Velocity} = \frac{\text{displacement}}{\text{time}} = \frac{14}{8}$$

1. 75 m/sec in the direction AD

2

3

(A) 1. a 2. b 3. a

(B) 1. Acceleration. 2. Long sightedness

(C) 1. The universe is in a state of continuous expansion.
2. The object moves with positive acceleration.

4

(A) 1. Secondary axis of the mirror.

2. Gamete. 3. Solar telescope.

(B) 1. The formed centrifugal force causes the nebula to lose its spherical shape and became in a form of flat rotating disk, separation of parts of nebula in the form of gaseous rings that rotate around the remaining mass

2. Light energy changes into heat energy which kills cancer cells not healthy cells

(C) (3), because it covers equal distances (10 m) at equal intervals of time (1 sec),

$$\text{as } V = \frac{d}{t} = \frac{10}{1} = \frac{20}{2} = \frac{30}{3} = 10 \text{ m/sec}$$

5

(A) 1. (X) 2. (X) 3. (✓)

(B) 1. (16) chromosomes. 2. (8) chromosomes.

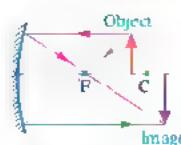
(C) This means that the distance covered in the west direction from the primary position of movement towards its final position equals 20 m.

Model Exam 3

1

(A) 1. (X) 2. (X) 3. (X)

(B)



Properties : Real inverted and magnified

(C) 1. Formation of planets of the solar system.

2. Carrying the genetic traits of the living organism

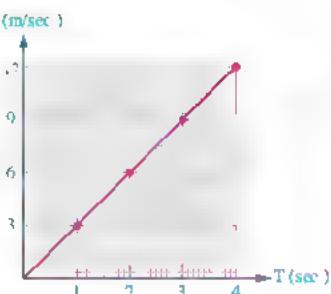
1

(A) 1. a 2. b 3. d
 (B) 1. t = $\frac{d}{V} = \frac{1+10+5+2}{6} = 3 \text{ sec}$
 2. t = $\frac{d}{V} = \frac{10}{4} = 2.5 \text{ sec.}$

(C) 1. Because it aims to growth of living organisms and to compensate the damaged cells.
 2. Because the relative speed equals the difference between their speeds equals zero

3

(A) 1. b 2. c 3. d
 (B) 1. metaphase 2. mitotic
 (C) 1.



2. a $\frac{V_2 - V_1}{\Delta t} = \frac{12 - 0}{4 - 0} = 3 \text{ m/sec}^2$

4

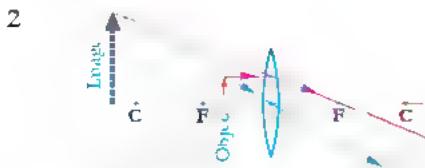
(A) 1. straight 2. convex
 3. prophase
 (B) 1. Starfish. 2. Plane mirror.
 (C) 1. (6) meters 2. (2) cells.

Model Exam 4

1

(A) 1. b 2. a 3. b

(B) 1. Convex lens



(C) 1. Cataract
 2. Discovering and treatment of cancer.

1

(A) 1. (X) 2. (X) 3. (X)
 (B) 1. (32) chromosomes. 2. (16) chromosomes
 (C) 1. Virtual, erect and diminished
 2. Virtual, erect and diminished.

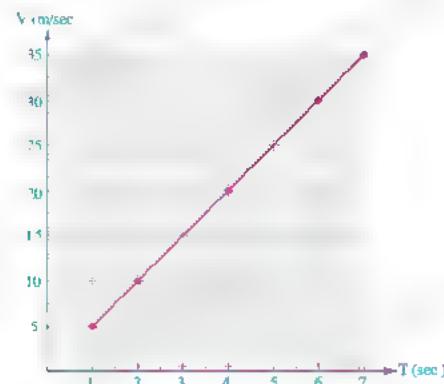
1

(A) 1. Sporangium
 2. Crossing over phenomenon.
 3. Focal length
 (B) 1. Because it is formed by intersection of the extensions of reflected light rays, and it can't be received on a screen
 2. Because the resulted offspring combines the genetic traits from two sources, and also the occurrence of crossing over phenomenon in meiosis
 (C) 1. budding 2. (2)

4

(A) 1. the condensation of cytoplasm.
 2. interphase 3. 50°

(B)



a $\frac{V_2 - V_1}{\Delta t} = \frac{35 - 5}{7 - 1} = \frac{30}{6} = 5 \text{ m/sec}^2$

(C) 1. Nebular theory 2. concave mirror.

Model Exam 5

1

(A) 1. Motion 2. Pole of the mirror
 3. Velocity.

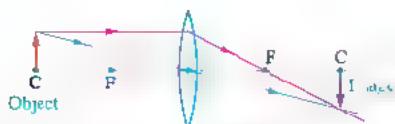
(B) 1. The genetic variation will not occur between members of the same kind.
 2. No image is formed and the refracted light rays pass through the lens as parallel rays.

(C) Velocity = $\frac{\text{displacement}}{\text{time}}$ = $\frac{50}{10}$ = 5 m/sec.
 in the direction \vec{AC} .

2

(A) 1. Velocity 2. binary fission
 3. zero

(B)	Scalar physical quantity	Vector physical quantity
	It is the physical quantity that has magnitude only and has no direction.	It is the physical quantity that has magnitude and direction

(C)

The position of the image At the centre of curvature (C)

3

(A) 1. (10) 2. plane mirror
 3. 220 million years

(B) 1. Because the mirrors of the cars in front of the ambulance car, form a laterally inverted image for this word, and thus it appears laterally corrected to the drivers.
 2. Because the car's speed changes according to the conditions of the road

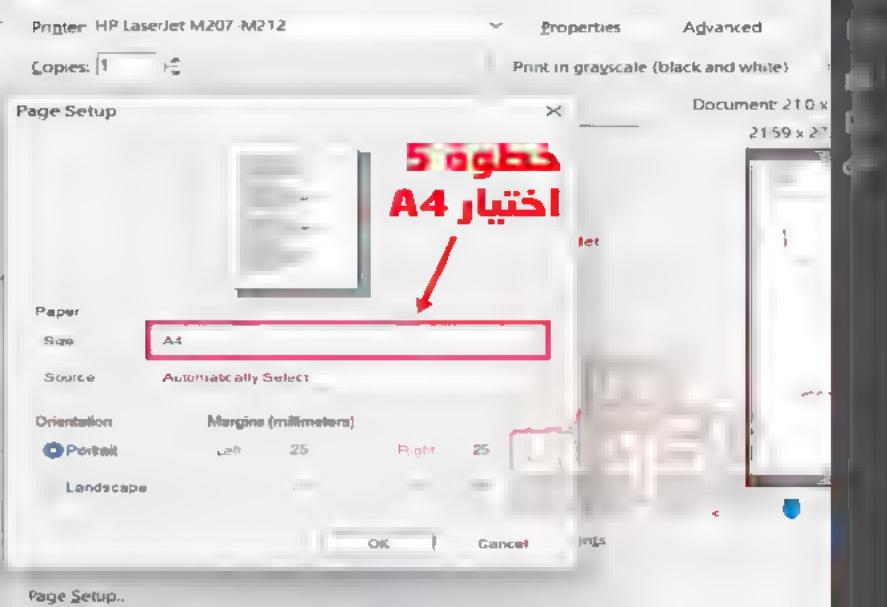
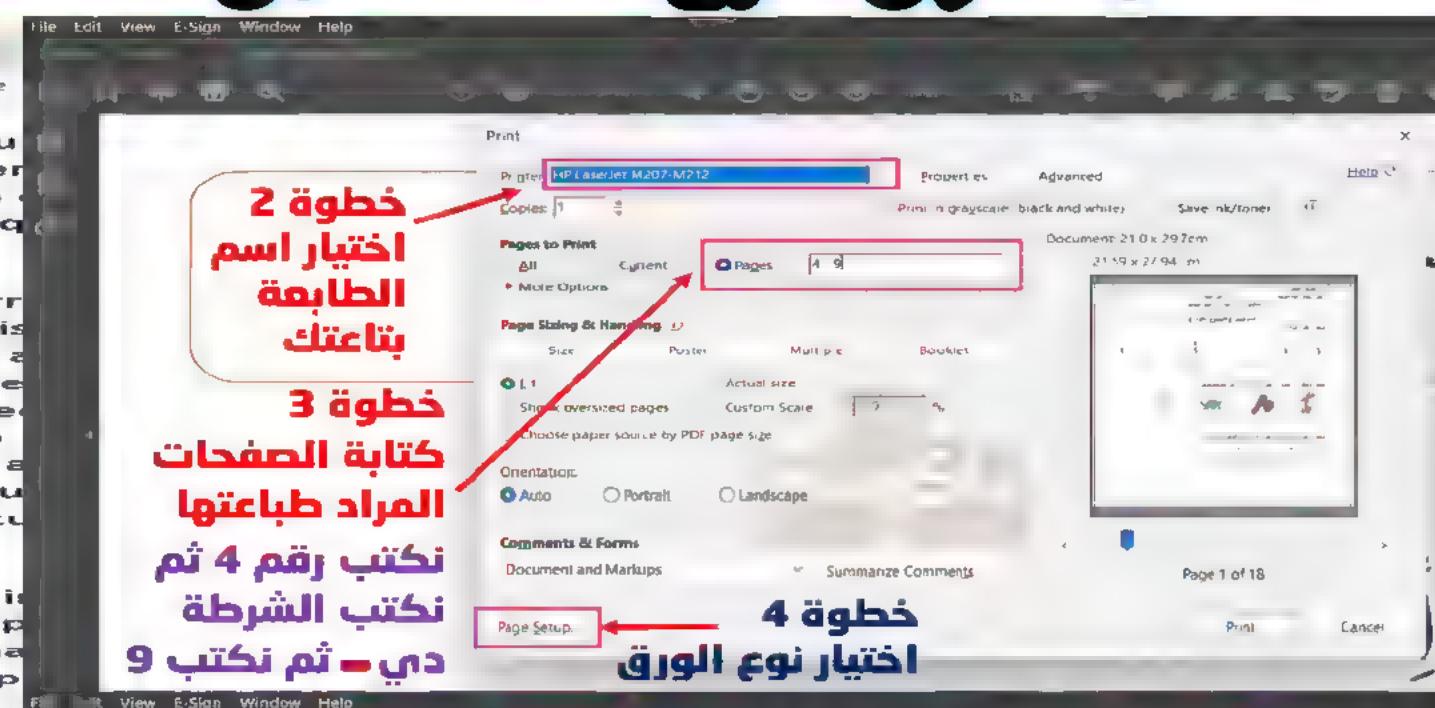
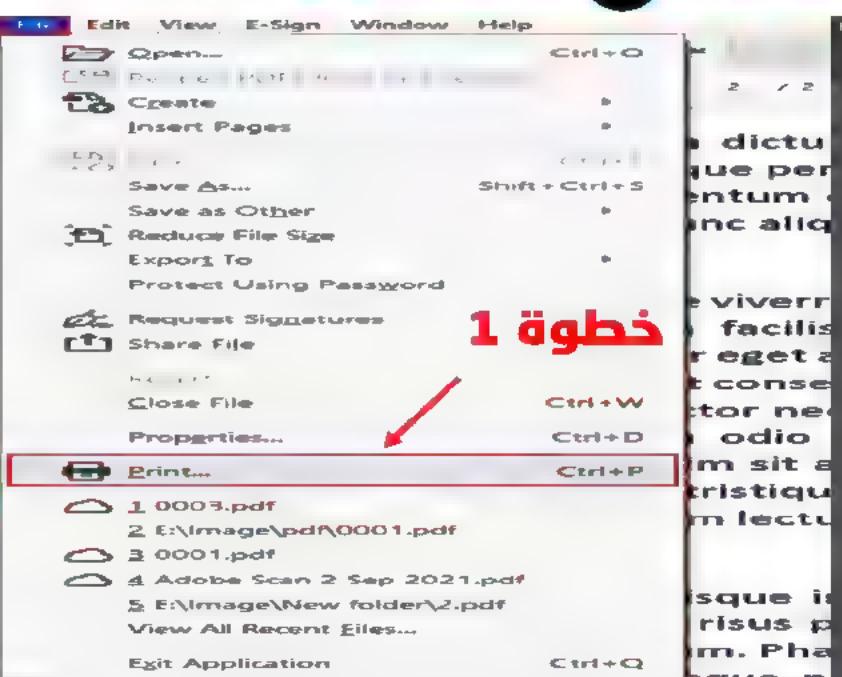
(C) 1. (A) Prophase I (B) Telophase I
 (C) Metaphase I (D) Anaphase I
 2. (A) \longrightarrow (C) \longrightarrow (D) \longrightarrow (B)

4

(A) 1. a 2. d 3. c

(B) 1. It reflects on itself
 2. Pollen grains are produced.
 (C) 1. meiotic 2. zygote

كيفية طباعة صفحات معينة من ملف معين مثل ازاي نطبع الصفحات من صفحة 4 الى صفحة 9



حمل الان

مجاناً وقطبياً

المطاعات رمادي (2)

الشـرم العـلـوـي

RaNia-Sayed





Final Examinations of Some Governorates

2024

1

Cairo Governorate

Answer the following questions :

Question 1

A Write the scientific term that represent each of the following statements :

1. The speed of a moving object relative to a static or a moving observer.
2. The straight line that passes by the centre of curvature of the mirror and any point on its surface except the pole.
3. It is formed from the centrosomes in the animal cell during the cell division.
4. The change of an object position as time passes according to a fixed position.

B Write one example for each of the following statements :

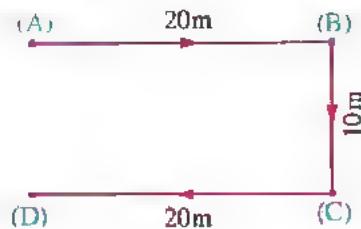
1. A division to produce gametes.
2. A mirror, always forms a diminished image for the object although its position changes.
3. A multicellular living organism reproduces asexually by budding.
4. A galaxy contains the Sun and the solar system.

C In the opposite figure, an object starts moving from point (A) to (B), then to (C) stopped at (D), so the value of :

1. The total distance covered by the body is

$$= \dots \text{metre}$$

2. The displacement is = metre.



Question 2

A Choose the odd word in each of the following :

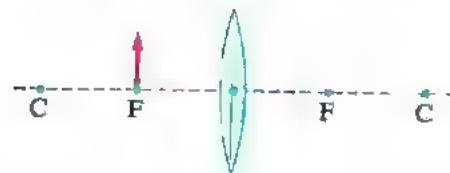
1. Ovum – Anther – Testis – Ovary.
2. Reversed – Equal to the body – Upright – Real.
3. Euglena – Starfish – Amoeba – Paramecium.
4. Force – Acceleration – Time – Displacement.



B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. The theory that explains the origin of the universe.	a. average speed.
2. Fusion of a male gamete and a female gamete to form a zygote.	b. an object at rest.
3. The (distance - time) graph of it is represented by a straight line parallel to the time axis.	c. a moving object.
4. The product of dividing the total distance covered by the moving object over the total time.	d. big Bang.
	e. fertilization

C In the following figure, where does the object's image form ?
And give a reason.

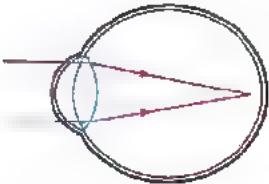
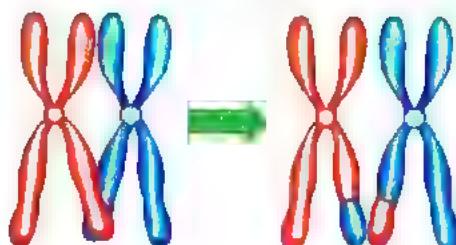


Question 3

A Complete the following sentences :

1. The is chemically consists of nucleic acid and protein.
2. Velocity is the value of at one second.
3. In the universe, groups of stars gathered to form
4. The lens is a transparent medium that the light and is limited with two spherical surfaces.

B Study the following figures, then answer the questions below each :

Fig (1)	Fig (2)
 <p>1. Type of sight defect is</p> <p>2. Sight defect is corrected using</p>	 <p>3. This phenomenon is called</p> <p>4. It takes place between the two inner of each tetrad.</p>

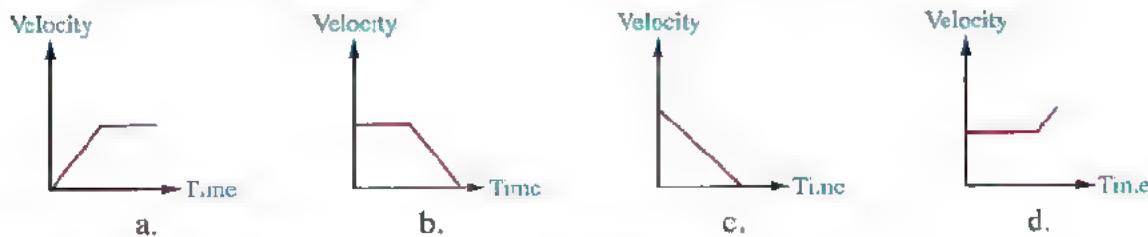
C Calculate the time required for changing the speed of a moving object from 15 m/s to 25 m/s when the object moves in uniform acceleration its value is 2 m/s^2 .

Part 3

Question 4

A Choose the correct answer :

1. The angle of reflection of a light ray falls perpendicular on the reflecting surface equal to
a. zero°. b. 45° c. 90° d. 180°
2. Each one of the two chromatids groups migrates towards the cell's poles in
a. prophase. b. metaphase. c. anaphase. d. telophase.
3. An object was put at 20 cm from a plane mirror, the distance between the object and its image is cm.
a. 10 b. 20 c. 30 d. 40
4. The graph that represents the movement of an object moves at a constant speed then negative acceleration is ...
.....



B Correct the underlined in the following sentences :

1. The number of chromosomes which found in the sperm is double the number of chromosomes in the ovum of the same species.
2. The value of displacement is the length of the shortest curved line between two positions.
3. Laplace is the scientist who established the crossing star theory for explanation the evolution of the solar system.
4. When a body moves at regular speed it covers equal distances at unequal periods of time.

C Show by drawing the image formed when an object is placed at distance of 10 cm from concave mirror its focal length is 4 cm, mention the properties of the formed image.

2

Giza Governorate

Answer the following questions :

Question 1

A Complete the following sentences :

1. galaxy contains the Sun star and the solar system.
2. The cell prepares to enter the stages of meiotic division in the phase which is called



3. A car moves at a speed 70 km/h, so its speed relative to an observer moves in the opposite direction by a speed 50 km/h is
4. The incident light ray which falls parallel to the principal axis of the concave mirror, reflects

B Put (✓) or (✗) :

1. The chromosome chemically consists of nuclear acid called RNA and protein. ()
2. The formed image by a plane mirror is always real image. ()
3. The speed of a moving object increases when the time it takes to travel the same distance decreases. ()
4. One of the causes of short-sightedness is an increase in the diameter of the eyeball. ()

C When is the acceleration is a positive acceleration ?

Question 2

A Choose the correct answer :

1. Laplace scientist assuming the origin of the solar system is the
 - a. nebula.
 - b. crossing star.
 - c. Sun star.
 - d. jupiter.
2. To determine the length we must know
 - a. magnitude and direction.
 - b. the measuring unit.
 - c. magnitude and the measuring unit.
 - d. magnitude, direction and the measuring unit.
3. Starfish arms could be regenerated and give a new complete animal if they contain a part of the
 - a. bud.
 - b. zygote.
 - c. spores.
 - d. central disc.
4. If an object moved and coverd distance of 50 metre in a straight line in a certain direction, then the magnitude of the displacement is equal .
 - a. zero.
 - b. 20 m.
 - c. 50 m.
 - d. 80 m.

B Write the scientific term of each of the following statements :

1. The uniform speed by which the moving object moves to cover the same distance at the same period of time.
2. The phenomenon which contributes in genes exchanging between the two homologous chromosome's chromatids and distributing them randomly in the gametes.
3. The point that lies in the middle of the reflecting surface of the spherical mirror.
4. The product of the multiplication of the speed of the object by time.

C Give reason for :

The focal length of a spherical mirror can be determined by knowing its radius of curvature.

Part 3

Question 3

A Correct the underlined words in the following sentences :

1. If an object is placed at a distance less than focal length of a concave mirror, then the formed image is located between the focus and the center of curvature.
2. The gravitational force of the **Earth** controls of the orbits of the planets around it.
3. If the number of chromosomes in a somatic cell is (2N), then its number in a reproductive cell of the same species is (N).
4. The concept of motion is linked to stability of an object's position as time passes.

B Study the following figures and graphs, then answer :

Fig. (1)	Fig (2)	Fig. (3)
<p>Distance (m)</p>		

1. An object is moved according to this graph, find the distance covered after (5) seconds.

2. The figure represents one of the phases of cell division, what is the name of this phase ?

3. Draw the figure in your answer paper, then determine the path of the rays.

4. Mention the properties of the formed image.

C Mention the type of asexual reproduction in each of the following :

Amoeba – Sponge.

Question 4

A Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Velocity	a. are used instead of the glasses.
2. Sexual reproduction	b. the wide and extended space that contains galaxies, stars, planets and living organisms.
3. Contact lenses	c. is the scalar speed, but in a certain direction.
4. The universe	d. depends on two main processes, gametes formation and fertilization.



B Find the odd word in each of the following statements :

1. Acceleration – Mass – Displacement – Force.
2. The person see the far objects clearly – The image is formed behind the eye retina – The image is formed in front of the eye retina – Treated by using convex lenses.
3. Reproduction by using leaves – Reproduction by using roots – Reproduction by using stems – Reproduction by using seeds.
4. The properties of the formed image by a convex mirror : Virtual – Upright – Inverted – Diminished.

C A car moved from rest, its speed increased to 30 m/s in 10 seconds, calculate the acceleration of this car.

3 Alex, Governorate

Answer the following questions :

Question 1

A Choose the correct answer :

1. The Sun takes about 220 million years to complete one rotation around the
 a. Earth. b. centre of galaxy. c. planets. d. Mars.
2. In the first meiosis, the cell divides to form cells.
 a. two b. four c. six d. eight
3. The two factors necessary to describe the motion are ..
 a. area and time. b. mass and time. c. distance and time. d. force and time.
4. The image formed by a concave lens is always
 a. real, diminished and inverted. b. real, diminished and upright.
 c. virtual, enlarged and inverted. d. virtual, diminished and upright.

B Cross out the odd word in each statement from the following statements :

1. Yeast fungus – Hydra Mushroom fungus – Sponges.
2. Used in the solar ovens – Used in manufacturing of telescopes – Used in the car parking – Used in medical glasses industry.
3. The acceleration - The length – The force – The displacement.
4. Sperm cell Liver cell – Muscle cell Skin cell.

C Complete the following statement from between brackets :

The length of the shortest straight line between two positions, represents

(The displacement – The speed)

Part 3

Question 2

A Complete the following sentences :

- When an object covers equal in equal periods of time, then it moves at speed.
- Before mitosis, the genetic material duplicates in a phase which is called
- The distance between the focus of the concave mirror and its pole is called

B Put (✓) or (✗) in front of the following sentences :

- The uniform acceleration means that the speed of an object changes by unequal values through equal times. ()
- Velocity is a vector physical quantity which is not necessary to determine it identifying its magnitude and direction. ()
- Asexual reproduction occurs in the unicellular organisms only. ()
- The incident light ray passes through the focus exits from the lens parallel to the principal axis. ()

C An object is put at a distance of 3 cm from the optical centre of a lens, the formed image was upright, virtual and magnified.

- Mention the type of the used lens.
- Show by drawing the path of rays that form this image.

Question 3

A Write down the scientific term for each of the following statements :

- A glowing gaseous sphere revolves around itself to form the solar system.
- A point inside the lens that lies on the principal axis in the mid distance between its faces.
- Physical quantities, it is enough to identify them knowing their magnitude only.
- A type of reproduction which is considered as a source of genetic variation from the parents to the their offspring.

B Mention one example for the following :

- It always forms a virtual, upright and equal image to the object.
- It is used to identify the speed of cars.
- An animal has the ability to compensate its missing parts to give a complete animal.
- It takes place as a result of increasing in the eyeball diameter, causes the retina to be far from the eye lens.

C Mention the importance of The vegetative reproduction in plants.



Question 4

A Correct the underlined words :

1. In mitosis, the nucleolus and the nuclear membrane disappear at the end of anaphase.
2. The solar system is located in one of the oval arms of the Milky Way galaxy.
3. The total distance which is covered by a moving object divided by the total time is known as the displacement.
4. If the angle of incidence equals 20° , then the angle between the reflecting surface and the reflected light ray equals 20° .

B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Convex mirror	a. is the ray that bounces off from the reflecting surface.
2. The motion	b. carry the genetic information of the living organisms.
3. The nuclear acid	c. its reflecting surface is a part of the inner surface of the sphere.
4. The reflected ray	d. is the change of an object position through a period of time.
	e. its reflecting surface is a part of the outer surface of the sphere.

C If the relative speed of a car equals 60 km/h relative to an observer in another car moves in the same direction with a speed of 40 km/h. Calculate the actual speed for the car.

4 | Qalyoubia Governorate

Answer the following questions :

Question 1

A Choose the correct answer in each of the following :

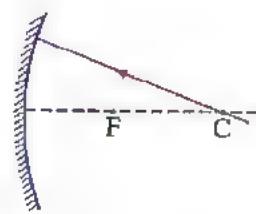
1. An object moves with a uniform speed of 7.2 km/h, so its speed equals m/s.
 a. 1 b. 3.6 c. 2 d. 4

2. In the opposite figure : the angle of reflection
 of the light ray = °
 a. 90 b. 45 c. 30 d. zero

3. The two factors, which can be used to describe the motion of a body are
 a. distance and a time. b. speed and time.
 c. area and time. d. distance and speed.



The diagram shows a concave mirror on the left with a dashed horizontal axis passing through its center. A solid red light ray originates from point F on the axis and reflects off the mirror, passing through point C. A dashed green line extends from C through the mirror to point F, representing the path of the reflected ray.



Part 3

4. The optical piece which forms a reversed, equal image for an object is

- a. convex mirror.
- b. concave mirror.
- c. plane mirror.
- d. convex lens.

B First : Put (✓) or (✗) in front of the following sentences :

1. The starfish reproduces sexually by binary fission. ()

2. The radius of curvature of mirror equals half of its focal length. ()

Second : Rearrange each of the following sentences :

1. An object at the center of curvature – An object very far (infinity) - An object between the focus (F) and the centre of curvature (C) – An object at a distance greater than double of focal length.

(descending order according to the length of formed image by concave mirror).

2. Anaphase (1) – Prophase (1) – Telophase (1) – Metaphase (1).

(according to priority of occurrence in first meiotic division).

C Calculate the relative speed for a car which moves with speed 80 km/h relative to an observer moves with speed 70 km/h in the opposite direction.

Question 2

A Choose from column (B) what suits it (suitable) in column (A) :

(A)	(B)
1. The reproduction in hydra takes place (occurs)	a. by budding.
2. The opposite graphical relation represents an object moves with	b. interphase.
3. The chromatin reticulum condenses in	c. uniform velocity
4. The opposite graphical relation represents an object moves with	d. by spores.
	e. prophase.
	f. non-uniform velocity.

B First : The opposite figure represents the galaxy to which our solar system belongs to.

1. What is the name of this galaxy ?

2. To which kind of galaxies does this galaxy belong ?



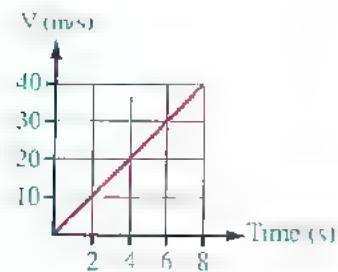
Second : Compare between the real focus and the virtual focus, in lenses.

(according to method of formation)



C The opposite graph represents the relation between (Velocity - Time) for the movement of an object, Find the acceleration by which this object moves.

Question 3

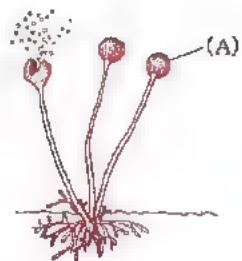


A Correct the underlined words :

1. The periodic motion is the simplest type of the transitional motion.
2. The chromosomes are rounded bodies.
3. If an object moved in a circular path of radius (r) to cover a distance = (πr) , so its displacement equals $(2\pi r)$.
4. The treatment of cancer by using nano-molecules of gold is considered an application for genetic engineering in a medical field.

B First : Study the opposite figure, then answer :

1. What is the name of the part which is indicated by letter (A) ?
2. Determine the type of cell division (meiosis – mitosis) which these part use at growing.



Second : When do the following values equal zero ?

1. The initial velocity for a movement object.
2. The value of the acceleration by which the object moves.

C An object of length 5 cm is placed at a distance = 20 cm from a convex lens its focal length = 10 cm, calculate the length of the formed image then calculate the distance between this image and the lens.

Question 4

A Complete the following spaces by using the words between brackets :

(Displacement of the object – $\frac{3}{1}$ – zero – Nebula – The time of journey – gaseous cloud – $\frac{1}{3}$ – real speed)

1. is considered from scalar physical quantities.
2. According to Big Bang theory the ratio of helium to hydrogen is
3. According to Laplace theory, the solar system was glowing gaseous sphere which is called
4. An observer and object are moving in the same direction, with the same speed, so the relative speed of the object relative to the observer equals

Part 3

B First: Write the scientific term for each of the following sentences :

1. The point inside the lens that lies on the principal axis in the mid-distance between its two spherical faces.
2. Asexual reproduction that takes place (occurs) by different organs in plants without need of seeds.

Second : Mention (write) one importance of each of the following :

(c) An object is placed at the middle distance between plane mirror and convex lens of focal length = (10 cm) and if the distance between the formed image in the plane mirror and the position of the object = 30 cm. Mention the properties of the formed image by the convex lens.

5 | Menofia Governorate

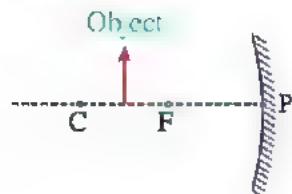
Answer the following questions :

Question 1

A Complete the following sentences:

1. The origin of solar system according to crossing star theory is
2. is a vision defect which causes due to increase in the focal length of eye lens.
3. The moving object takes half time to cover the double distance, so its speed equals of its origin speed.
4. Number of the cells results from first meiotic division the number of the cells results from mitotic division.

B Choose the correct answer :

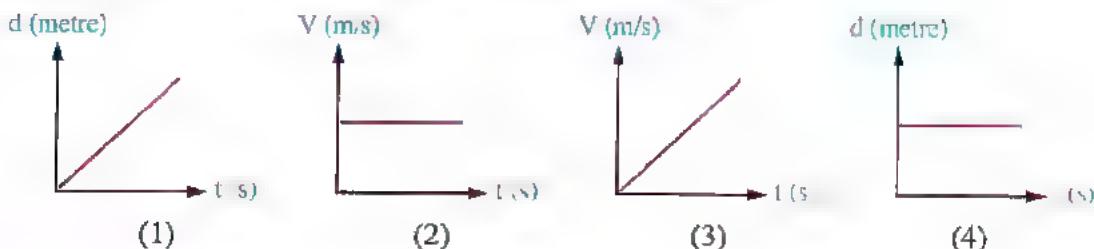




4. On putting an object at a distance 9 cm from optical centre of a convex lens it forms real, inverted and magnified image and when moving it 2 cm away from first position from the lens real, inverted and diminished image was formed, so the expected focal length of this lens equals

a. 12 cm. b. 10 cm. c. 9 cm. d. 5 cm.

C Which of the following graphs represents a body at rest ?



Question 2

A Write which of each the following sentences indicate :

1. Fusion of a male gamete and a female gamete to form zygote.
2. Glowing of a star for a short time to become one of the most shining stars in the sky, then its glowing disappears gradually to return to as it was.
3. Type of speed of car which covered distance 5 m through time 5 second, then covered distance 10 m in the same time during its motion.
4. The state of an observer when the relative speed of a moving car equals to its actual speed.

B Correct the underlined words :

1. On putting an object at a distance 5 cm from convex lens its focal length is 25 cm, a virtual and diminished image was formed.
2. An object moves in circular path its radius 14 m and covered three complete circles, the displacement of object equals 280 m.
3. Gametes in living organisms formed from special cells known as somatic cells.
4. The force is scalar physical quantity and its measuring unit is Newton.

C An object is placed at the distance (40 cm) from spherical mirror its focal length (20 cm), an equal image was formed to the object, and when the mirror was moved toward the object (10 cm), another image was formed. What is the properties of new image ?

Question 3

A Put (✓) or (✗) in front of the following sentences :

1. Distance equals displacement when object moves in straight line and return back to mid-distance. ()
2. Big Bang theory based on existence something that looks like clouds in the space. ()

Part 3

3. The formed image on the mirror at the left side of car driver is upright and diminished. ()
4. Nuclear membrane is formed at two poles of the cell during anaphase I of the first meiotic division. ()

B Write the number which indicates each of the following :

1. Angle of reflection when the light ray falls perpendicular on the reflecting surface of a plane mirror. ()
2. Speed of body covered (300 m) through half minute. ()
3. Number of chromatids which shares in each tetrad and exchange their parts to produce genetic variation during first meiotic division. ()
4. Value of diameter of curvature of convex lens which forms an equal image of object at a distance (20 cm) from its optical center. ()

C What is the number of individuals which results from three sequences binary fission in Euglena ?

Question 4

A Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Solar system	a. amount of displacement in one second.
2. 23 pairs of chromosomes	b. formed from 46 chromatids.
3. Velocity	c. located in one of the spiral arms of Milky Way galaxy.
4. Concave mirror	d. amount of distance which covered in one second.
	e. formed from 92 chromatids.
	f. used in solar oven.

B Complete the following sentences with suit words from between brackets :

(equal to – double – half)

1. Speed of car equal 90 km/h speed of train equal 50 m/s.
2. Radius of curvature of spherical mirror its focal length.
3. Number of chromosomes in a reproductive cell is number of chromosomes in a somatic cell.
4. Distance between the object and the surface of a plane mirror distance between the same object and its formed image.

C An object moves in straight line with speed (5 m/s) for distance (50 m), then moves in the same direction distance (160 m) through time (20 seconds). Calculate the amount of average speed of object which object covered from the start to the end of motion.



6 | Dakahlia Governorate

Answer the following questions :

Question 1

A Complete the following sentences :

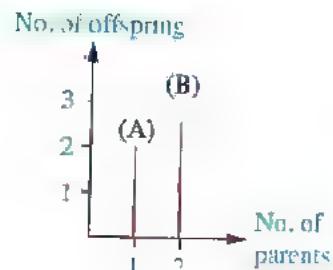
1. The velocity and the displacement are similar in , and they are different in
2. The point in the mid-distance between two spherical faces of a lens is called and the point in the middle of the reflecting surface of a spherical mirror is called
3. In a skin cell of a rabbit, the spindle fibers are formed by during
4. The acceleration of a moving body is vanished when its speed equals its

B Write the scientific term :

1. A glowing gaseous sphere revolving around itself that formed the solar system, according to Laplace assumptions. (.....)
2. An optical piece that is used to treat a vision defect, which causes due to the formation of image in front of the retina. (.....)
3. The regular speed by which the object moves to cover the same distance at the same period of time. (.....)
4. A process in which some parts of the two inner chromatids of each tetrad are exchanged. (.....)

C The opposite figure represents the relation between number of parents and number of offspring in two cases of reproduction :

1. What is the type reproduction in each case ?
 - (A) :
 - (B) :
2. What is the relation between the genetic structures of each offspring and their parent(s) in the two cases (A) and (B) ?



Question 2

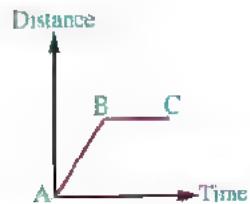
A Choose the correct answer :

1. Euglena reproduces by
 - a. regeneration.
 - b. budding.
 - c. binary fission.
 - d. sporogony.

Part 3

2. In the opposite figure, acceleration of the object in the period (AB) equals the value of _____ in (BC) period.

- a. its acceleration
- b. its displacement
- c. its speed
- d. its distance



3. If an object of 8 cm length is put in front of a spherical mirror that has an inner reflecting surface and its focal length is 40 cm, an inverted image its length 16 cm is formed, so the distance between the object and the mirror may be

- a. 40 cm.
- b. 60 cm.
- c. 80 cm.
- d. 100 cm.

4. A car moved by speed 75 km/h and it is observed by traffic policeman as this car moves with speed 35 m/sec, so the speed of traffic policeman equals km/h.

- a. 110
- b. 35
- c. 51
- d. 40

B Correct the underline word :

1. Asexual reproduction depends on reduction cell division.

2. When an object is placed at the focus of a convex lens, diminished, erect image is formed.

3. A body moves on the circumference of a circle its radius = r and covers πr distance, so its displacement equals $2\pi r$.

4. Pollination is the combination of a female gamete and a male gamete to form a zygote.

C If the driver used the brakes of a moving car its speed decreases by rate 3 m/sec each one sec. until it stops after 5 seconds, calculate its speed before the driver press the brakes.

Question 3

A An object is placed at distance 10 cm from the optical centre of the lens, then a diminished, inverted image for the object is formed. And when the object is moved 4 cm toward the lens, an inverted and equal image is formed.

1. What is the type of the lens ?
2. Calculate the focal length of the lens.
3. Draw a diagram showing the path of rays of object's image in the second case.

B Circle the odd word and write the scientific term of the rest words :

1. Virtual – Inverted – Upright Equal to the object.
2. The testis – The ovary - The ovum – The anther.
3. Object its mass 95 kg – Its length 175 cm – 300 N force affected on it to forward – It covers distance 25 metre.
4. Moulton scientist – Laplace scientist – Crossing star theory – Chamberlain scientist.



C In the opposite figure a body moves from point (A) to point (C) passing by point (B) and returns to point (A) in the same path in time 35 sec. Calculate :

1. The average speed.
2. The velocity.

Question 4

A Write the number which indicates each of the following :

1. Diameter of curvature of a convex mirror its focal length 5 cm.
2. Percentage of helium gas in the universe within minutes after the Big Bang.
3. Number of cells that produced from (4) successive mitosis of a skin cell.
4. Time that is needed for the Sun to make one rotation around the centre of galaxy.

B The opposite figure represents a cell during division, answer the following questions :

1. What is the name of this phase ?
2. What happen in the phase that follows it ?
3. What is the type of the cell division ?
4. What is the importance of this type of division ?



C Give reason :

1. The lens has two foci, while the spherical mirror has one focus
2. The car cannot move by uniform speed practically.

7 | Sharkia Governorate

Answer the following questions :

Question 1

A Write the scientific term :

1. The regular speed by which the object moves to cover equal distances at the same period of time.
2. An optical piece that forms a reversed image of the object.
3. The type of cell division that takes place in plants to reproduce by using plants organs such as the root, stem, or leaves without using seeds.
4. The continuous separating between galaxies in the universe as a result of their regular movement.

B Choose the correct answer :

1. Algae reproduce asexually by
 - a. regeneration and spore propagation.
 - b. budding and binary fission.
 - c. spore propagation and binary fission.
 - d. budding and regeneration.

Part 3

2. If an object is placed at the center of curvature of a convex mirror ..

- a. a real image is formed.
- b. a diminished image is formed.
- c. an equal image is formed.
- d. no image is formed.

3. From the scalar physical quantities

- a. radius and area.
- b. time and force.
- c. acceleration and speed.
- d. mass and displacement.

4. A spherical mirror forms a real image with a length of 5 cm for an object with a length of 15 cm is placed at a distance 20 cm from its pole. The possible focal length of this mirror is cm.

- a. 15
- b. 8
- c. 12
- d. 10

A car was moving at a speed of 5 m/s, after one second its speed became 10 m/s, after

C A car was moving at a speed of 5 m/s, after one second its speed became 10 m/s, after another second its speed increased by 15 m/s, and after applying the brakes, its speed became 10 m/s during the third second, and in the fourth second its speed remained 10 m/s. Then used the brakes to stop the car completely at the fifth second.

Explain : The movement of the car graphically only.

Question 2

A Complete the following sentences :

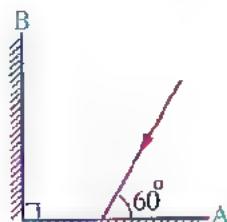
1. The change in displacement per one second is, while change in velocity per one second is
2. The origin of the solar system in the opinion of Chamberlain and Moulton is, while according to Laplace's theory is
3. The male gametes in humans are, while in flowering plants are
4. If a car moves at a speed of 72 km/h, this means that it covers a distance in a second, and a distance in 50 seconds.

B Correct the underlined words in the following statements:

1. The graphical relation (acceleration – time) of an object moves at a uniform speed, is graphically represented by a straight line parallel to the time axis.
2. When a moving body takes 2 seconds to reach its final speed to three times its initial speed, the acceleration of its motion is half the amount of its initial speed.
3. The focal length of a thin convex lens is equal to the focal length of a thick convex lens.
4. When a somatic cell divides 3 times consecutively, 6 cells are produced that contain the same genetic material as the original cell.

C In the opposite figure : Trace the path of the light ray falling on mirror A and reflecting from it to fall on mirror B.

Explain your answer with a drawing and determine the angle of incidence and reflection values on the drawing.





Question 3

A Extract the odd word or phrase, then write what links the rest of the words :

1. Occurrence of the crossing over phenomenon – Condensation of the chromatin reticulum and appearance of chromosomes in homologous pairs – Splitting of the centromere – Disappearance of the nucleolus and nuclear membrane – Formation of spindle fibers.
2. Upright – Results from the intersection of rays extensions – It cannot be received on a screen – It is formed in front of a reflecting surface.
3. Mass – Force – Metre – Time – Acceleration
4. Nebular theory – Big Bang theory – Crossing star theory – Modern theory.

B What happens in the following cases :

1. When a body moves in a straight line. (related to the speed and velocity).
2. The irregular of eyeball.
3. A light ray falls passing through the center of curvature of the mirror.
4. Putting the yeast fungus in a warm sugary solution.

C If the number of chromosomes in the nucleus of a plant stem cell is (6) pairs of chromosomes. Determine : The number of chromosomes in each of the following cell :

1. The nucleus of a pollen grain.
2. The nucleus of a zygote.

Question 4

A Put (✓) or (✗) and correct the wrong ones :

1. A plane mirror collects the light rays falling on it. ()
2. Many old stars gather in the center of the Milky Way galaxy. ()
3. Asexual reproduction occurs in unicellular organisms only. ()
4. If two objects move in the same direction from one point, the first at a speed of 20 m/s and the second at a speed of 15 m/s, the distance between them after 40 seconds becomes 300 metres. ()

B Choose the correct answer :

1. A body moves with an initial speed of 5 m/s with uniform acceleration, according to the relationship $a = 10/t$, the final speed of the body is m/s.
a. 0 b. 15 c. 10 d. 5
2. An object is put at a distance of 8 metres from a plane mirror, and it forms an image (Y_1). If the mirror moves a distance of 2 metres away from the object, it forms a new image (Y_2), then the distance between (Y_1) and (Y_2) becomes metre.
a. 16 b. 8 c. 4 d. 2

Part 3

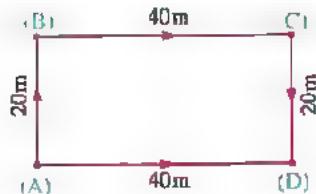
3. If an object is placed at a distance less than the focal length of a convex lens, a (an) image is formed of it.

- real, magnified
- virtual, magnified
- real, diminished
- at infinity

4. Two cells divided, one in the stomach of a human female and the other in her ovary. The ratio between the number of cells resulting from the division of each of them is respectively.

- 2 : 1
- 1 : 4
- 1 : 2
- 4 : 1

C In the opposite figure : Two cars move from point A at the same time to reach point D. The first car crossed the track (ABCD) in a time of 40 seconds. The second car crossed the track AD at a speed of 20 m/s.



- Which of the two cars reaches point D first ? And why ?
- Calculate the velocity of the first car.

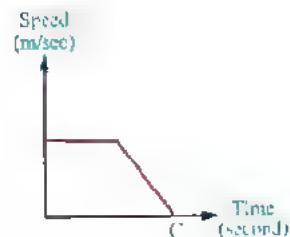
8 | Gharbia Governorate

Answer the following questions :

Question 1

A Write the scientific term :

- A theory that explains the origin of the universe from explosion of a very small gaseous ball of high pressure and high temperature.
- The straight line that passes by the centre of curvature of the mirror and any point on its reflecting surface except the pole of the mirror.
- A phase where some processes occur upon which the formation of a complete set of chromosomes that have the same number of the parent cell's chromosomes.
- From the opposite graphical figure :
The state of the body that is represented by point (c).



B Correct the underlined words :

- If a light ray falls on a smooth (plane) mirror as shown in the opposite figure, it reflects by an angle of reflection equals 180°.
- The number of chromosomes in a plant stem cell equals quarter its number in a pollen grain.
- A concave lens is put at the left side and right side of the car driver.
- When a body moves a distance of 70 m northward then returned 40 m southward, so its displacement is 110 m northward.



C What happens in the following cases ...?

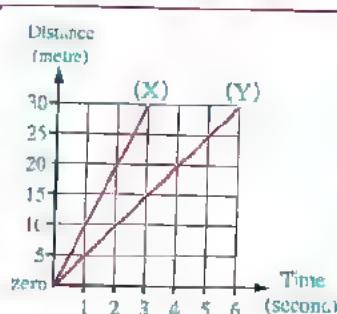
1. The direction of movement of plane is in the opposite direction of the wind.
(according to the time of the trip and amount of consumed fuel).
2. An object moves at a regular speed. (According to its acceleration).

Question 2

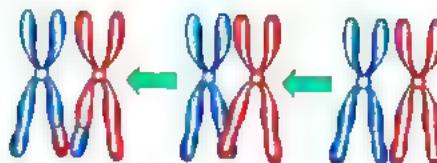
A Put (✓) in front of the right statement and (✗) in front of the wrong one :

1. The displacement of the body that starts its motion from point (A) directed as shown in the opposite figure, equals the value of the distance (AB). ()
2. The gravity of Earth keeps the rotation of the planets in fixed orbits around the Sun. ()
3. A bud emerges as a lateral bulge in yeast fungus then the cell nucleus divides mitotically into two nuclei, one of them remains in the parental cell and the other one migrates to the bud. ()
4. When the body moves in the same direction of movement of observer with the same speed, the relative speed will be more than the real speed. ()

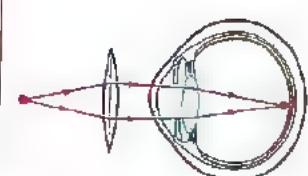
B Study the following figures then answer the questions below each figure :



1. The previous graph represents the (distance – time) graph of the movement of two bodies (X) and (Y) :
 - What is the kind of speed of the two bodies ?
 - Calculate the ratio between the speed of body (X) and speed of body (Y).



2. The previous figure represents a vital phenomenon, Complete the following :
 - This phenomenon is called _____.
 - This phenomenon occurs in the _____.



3. The previous figure represents correction of a vision defect :
 - The vision defect is _____.
 - Where was the image formed before correction ?

Part 3

C Compare between the following :

1. Thick convex lens and thin convex lens (according to focal length).
2. The formed image for a body that is placed at a distance of 10 cm in front of each of a plane mirror and a concave mirror that has a focal length of 5 cm.

Question 3

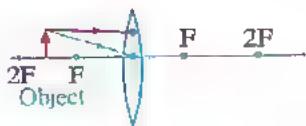
A Complete the following sentences :

1. From the opposite figure : the properties of the image that appears to the dentist in the mirror that he uses are
2. In the universe, groups of are gathered to form galaxies.
3. An object starts its motion from rest till its acceleration reaches 2 m/sec^2 . After 2 sec, the final speed by which it moves equals m/sec.
4. In the opposite figure, asexual reproduction in this living organism takes place by



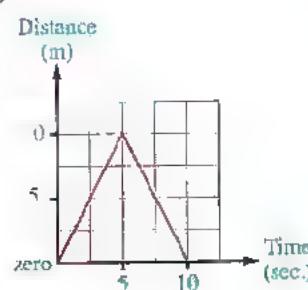
B Study the following figures then answer the questions below each figure :

1.



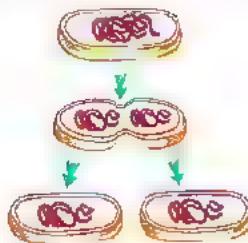
- Copy the previous figure in your answer paper then complete the direction of the rays which form the image of the object.
- Then mention the properties of the formed image.

2.



From the previous graph :
The average speed by which this body moves equals m/sec.

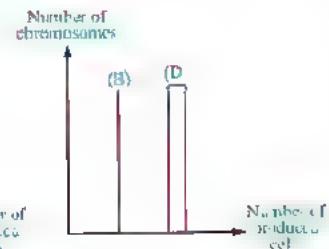
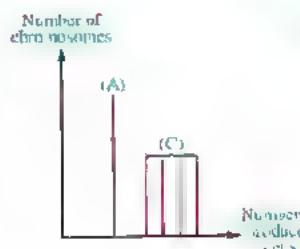
3.



From the previous figure :
- What is the name of this living organisms ?
- What is the type of reproduction that takes place in it ?

C The opposite two graphical figures represents the ratio between the number of the original cells (A) and (B) and the number of the produced cells from their division (C) and (D) :

1. What is the type of cell division that happens in each of cells (A) and (B) ?
2. If the number of chromosomes in each of cells (A) and (B) is 24 chromosomes, What is the number of chromosomes in each of cells (C) and (D) ?

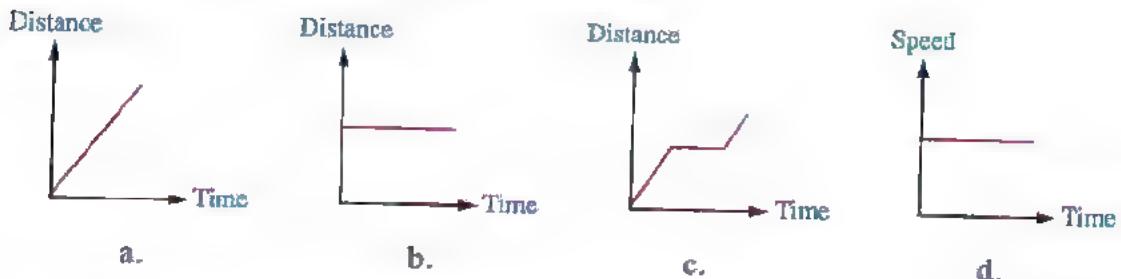




Question 4

A Choose the correct answer in each of the following :

1. The cancer cells can be detected by using of technological nano-molecules of metal.
 - a. tin
 - b. gold
 - c. iron
 - d. nickel
2. The earliest life forms began to appear on the Earth .
 - a. after formation of solar system.
 - b. before formation of galaxies.
 - c. after appearing of dinosaurs.
 - d. after appearing birds and mammals.
3. A car driver stopped in the road to eat his food in a rest then he completes his trip, the graphical figure that indicates this case is



4. A doctor advised a person who has a sight defect to use glasses with concave lenses, it means that this person suffers from
 - a. disability of seeing near objects clearly.
 - b. a decrease in the convexity of the eye lens surface.
 - c. a decrease in the eyeball diameter.
 - d. an increase in the convexity of the eye lens surface.

B Choose the odd word (or statement) out and then write what the rest words (or statements) have in common :

1. Mass – Length - Force – Time.
2. Formed as a result of the intersection of the extensions of the rays – Cannot be received on screen – Upright (erect) – Formed in front of reflecting surface of mirror.
3. Reproduction by part of stem – Reproduction by part of root – Reproduction by seeds – Reproduction by tissue culture.
4. Made of glass Can stick to the eye cornea Very thin lens – Made of plastic.

C Calculate the average speed of the body that moves in a circular path whose length is 150 m, if it covers 10 successive rounds through 2.5 minutes.

9 | Damietta Governorate

Answer the following questions :

Question 1**A Choose the correct answer :**

1. The theory that explained the origin of the universe is the theory.
 a. nebular b. crossing star c. modern d. Big Bang
2. From the scalar physical quantities
 a. mass – acceleration. b. displacement – time.
 c. distance – radius. d. force – distance.
3. If an object its length 8 cm is placed at a distance 10 cm from a convex mirror its focal length is 5 cm, the length of formed image is cm.
 a. 10 b. 5 c. 16 d. 8
4. The ratio between the number of chromosomes in a skin cell of an animal to the number of chromosomes in a cell of its ovary
 a. (1 : 2) b. (2 : 1) c. (1 : 1) d. (1 : 4)

B Write the scientific term :

1. The regular speed by which the object moves to cover the same distance at the same period of time.
2. A vision defect leads to the formation of image in front of the retina.
3. A type of asexual reproduction in which the parent disappears.
4. The part which responsible for pulling of chromosomes toward the poles of the cell in anaphase.

C In a clock, if the length of the hand of seconds is 7 cm, Calculate the time taken by the hand of seconds to cover a displacement equals 14 cm.**Question 2****A Complete the following sentences :**

1. The scientists able to explain the origin of the universe, from the first second fraction of its evolution by the recent discoveries in the sciences of and
2. If the distance covered by an object decrease to half and time decrease to half, then its speed
3. The change in of mitosis are called reverse changes.
4. A train its length is 150 m runs at 50 m/sec, the time it takes to pass in front of railway shunter equal

B Correct the underlined words :

1. The focal length of thin convex lens equal the focal length of thick convex lens.
2. The crossing over phenomenon occurs in first metaphase.



3. The car moves in the opposite direction of the observer and with the same speed, the relative speed equals half the real speed.

4. The reproduction by spores is more popular in bacteria and algae.

C An object was placed at distance of 5 cm from the optical center of the convex lens, and no image was formed :

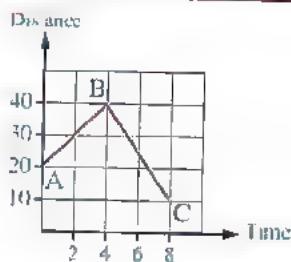
Draw the paths of the rays, and mention the properties of formed image when the object moves 3 cm away from the lens.

Question 3

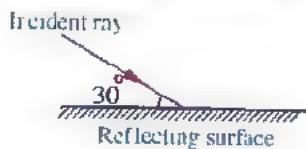
A Put (✓) or (✗) :

1. If a light ray falls passing through the optical centre of the lens, it refracts parallel to the principal axis. ()
2. The vegetative reproduction is a source of genetic variation in the plant. ()
3. The graphical representation (distance – time) for regular constant speed represented by straight line passing through the origin point. ()
4. In solar oven, a concave mirror is used to diverge light rays and generate extreme heat. ()

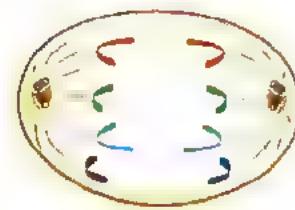
B Study the following figure then answer :



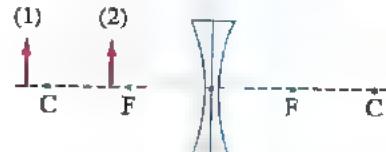
1. Velocity of an object equals =



3. The angle between incident light ray and the reflected light ray =



2. The figure shows the of the mitosis division.



4. If the object moves from (1) to (2), the size of formed image will be (smaller than – bigger than – equal to) the size of object.

C Someone had an accident, got broken shoulder bone and damaged the spinal cord :

1. What would you expect after a long period of treatment for both injuries ?
2. Give reasons for your answer.

Part 3

Question 4

A Mention the number which indicates each of the following :

1. The ratio between distance and displacement which covered a distance x in eastward direction and return back a distance $2x$ in west direction.
2. The number of cells produced by a skin cell dividing three successive divisions.
3. The focal length of spherical mirror its diameter 20 cm.
4. The number of stars in the solar system.

B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Nucleic acid	a. no image is formed.
2. Principal axis of mirror	b. displacement.
3. The shortest line between starting point and final point	c. carry genetic traits for the living organism.
4. The object placed at the focus of concave mirror	d. the line passes through center of curvature and its pole.
	e. the virtual and minimized image is formed.

C A car moves at uniform speed 20 m/sec. in 10 sec., then the driver pressed the brakes and their speed decreased by 2m/sec.², calculate :

1. The distance covered by the car in the first 10 sec.
2. The speed of the car after 3 sec from using the brakes.

10 Kafr El-Sheikh Governorate

Answer the following questions :

Question 1

A Choose the correct answer :

1. The ratio between final speed and initial speed of an object moves by positive acceleration equals ..
a. zero. b. one. c. more than one. d. less than one.
2. A body of 10 cm length is placed at the centre of curvature of concave lens, so that the image length equals cm.
a. 5 b. 10 c. 12 d. 20
3. The optical piece that forms an equal virtual image for the object is
a. convex mirror. b. plane mirror. c. convex lens. d. concave lens.
4. The ratio between the velocity of a body moved with a speed 72 Km/h and the velocity of a body moved by a speed of 20 m/sec. is
a. 3.62 b. 1 c. 0.28 d. 2



B Correct the underlined words :

1. Nucleolus and nuclear membrane disappear at the end of anaphase of the mitotic cell division.
2. When the angle between the incident light ray and reflected light ray equals 40° , so the angle of incidence equal 40° .
3. When the human body cell divides, the spindle fibres arise from condensation of the cytoplasm at the two poles of the cell.
4. An equal image for an object is formed at distance of 10 cm from a concave mirror its diametre is 5 cm.

C Choose the correct answer :

A body on a bike covers 300 metres in a minute and 420 metres in the next minute So, the average speed =

a. 300 m/s. b. 6 m/s. c. 210 m/s. d. 360 m/s.

Question 2

A Complete the following sentences :

1. When the body is moving at uniform speed, the acceleration equals
2. An object moved 16 metres towards the east and then returned to the starting point, so its displacement equals
3. The bread mould fungus reproduces by
4. In flowering plants, meiosis occurs in anther to form (as a male gamete).

B Write (True) or (false) in front of the following statements :

1. Vegetative reproduction is a source of genetic variation in plants ()
2. If a light ray passes through the optical centre of a convex lens, it passes parallel to the principal axis. ()
3. Increasing convexity of eye lens causes long-sightedness. ()
4. The universe emerged when atomic particles merged together producing helium and hydrogen gases. ()

C Problem : A car moves at a speed 50 m/sec. If the driver used the brakes to decrease the speed, so it decreases by 2 m/sec^2 . Calculate its speed after 12 seconds from using brakes.

Question 3

A Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Examples of scalar physical quantity is	a. at which the genetic material duplicates.
2. Gametes	b. time.
3. Interphase	c. metre/sec^2 .
4. Acceleration measurement unit is	d. it contains half the number of chromosomes in a somatic cell.

Part 3

B What happens when ...?

1. A reproductive cell divides meiotically in human male body.
2. A starfish loses one of its arms, while it contains a part of the central disc.
3. Two cars move with the same speed and in the same direction.
4. A plane flies against wind direction (according to time and consumed fuel).

C Mention the position of an object in front of a concave mirror if the formed image is :

1. Real, inverted and magnified.
2. Real, inverted and minimized.

Question 4

A Write the scientific term of each of the following statement :

1. A glowing gaseous sphere was revolving around itself, which assumed that it was the origin of the solar system.
2. The actual length of the path that a moving object covers from the starting point to the ending point.
3. The theory assumed that the solar system was originally a star rather than the Sun.
4. It represents the regular speed by which the object moves to cover the same distance at the same period of time.

B Cross out the odd word in each of the following :

1. Prophase – Reduction division – Metaphase Anaphase.
2. Real Virtual – Erect – Magnified.
3. Reproductive cells – Liver cells – Gametes cells Skin cells.
4. The properties of image in the concave lens are : (Virtual Magnified – Upright – Minimized).

C Show by drawing : the properties of an image of the object in front of a concave mirror, if you know that the length of image equals to the length of object.

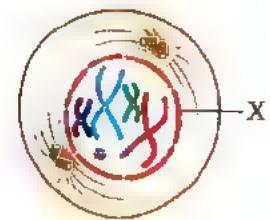
11 Behira Governorate

Answer the following questions :

Question 1

A Write the scientific term of each of the following statement :

1. The distance moved through a unit time.
2. Type of lenses is used to correct a vision defect which results from decreasing the convexity of the eye lens surface.
3. The distance covered with light in one year.
4. Male cells in plant contains (N) chromosomes.

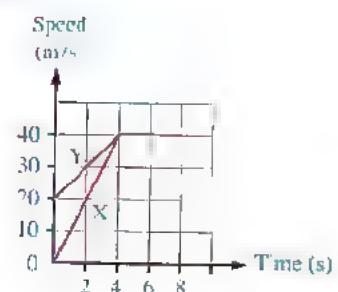


B When does each of the following occur :

1. The structure (X) disappears in the cell shown in front of you ?
2. No Image is formed for an object in front of a concave mirror ?
3. The magnitude of velocity is equals to speed of a moving object ?
4. The angle of incidence = the angle of reflection = zero ?

C Study the opposite figure then answer the following questions :

1. Which of the two objects starts its motion from rest ?
2. When does each of them start motion with a uniform speed ?
3. Which of the two objects moves with smallest acceleration at the beginning of its motion ?



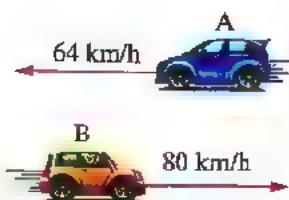
Question 2

A Choose the correct answer in each of the following :

1. The measuring unit of acceleration is
 a. m.s b. m.s² c. m/s d. m.s⁻²
2. Astronomers use to study the Sun.
 a. Hubble telescope b. solar telescope c. optical microscope d. light year
3. Two moving objects (A and B) covered the same distance. If the speed of object (A) is double speed of object (B), so the time taken by object (B) is the time taken by the object (A).
 a. equal to b. half c. double d. quarter
4. If you knew that a muscle cell in a female rabbit contains 22 pairs of chromosomes, then the number of chromosomes in the rabbit's ovum is chromosomes.
 a. 11 b. 22 c. 44 d. 88

B Correct the underlined words :

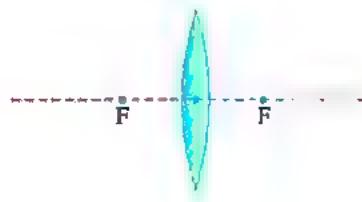
1. The sperm and the ovum share in zygote by a ratio of 1:2.
2. The uniform speed is a physical quantity that expresses the speed of an object increases by equal magnitudes in equal periods of time.
3. The ratio between the object's length to the image's length which formed by a concave mirror when the object is placed at a distance less than the focal length is equal to one.
4. The opposite figure represents two moving cars, the relative speed for an observer in car (A) is 10 m/s.



Part 3

(C) The opposite figure represents a convex lens with a focal length of 10 cm, if an object is placed in front of the lens at a distance of 15 cm from its optical center :

1. Transfer the drawing into the answer booklet, then draw the path of the light rays which forming the object image.
2. Mention the characteristics of the formed image ?



Question 3

(A) Complete the following statements :

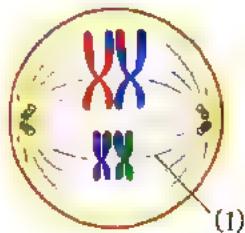
1. Force is considered a physical quantity, while mass is a physical quantity.
2. The universe consists of gaseous particles which are and
3. If the focal length of a convex mirror is 8 cm, then its radius of curvature is equal to
4. From the multicellular organisms that reproduce by budding are and

(B) Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Bread mould fungus	a. forming a virtual, erect and diminished image.
2. Amount of displacement	b. it reproduces sexually by spores.
3. Convex mirror	c. forming a virtual, erect image and equal to object's size.
4. Plane Mirror	d. it is the length of the shortest straight line between two positions.
	e. it reproduces asexually by spores.

(C) Study the opposite figure then answer the following questions :

1. Mention the name of that phase, then indicate the type of this cell division.
2. What type of cells does this division occur ?
3. Explain how structure (I) is formed in the plant cell.



Question 4

(A) Choose the odd word then write the relation between the other words :

1. The Modern theory – The Nebular theory – The Big Bang theory – The crossing star theory.
2. Nerve cells – Skin cells – Stomach cells – Muscle cells.
3. Solar ovens – Magnifying the image of the human face – Placed to the left and right of the car's driver – Reflecting the emitted light from the front bulbs in cars.



4.



a.



b.



c.

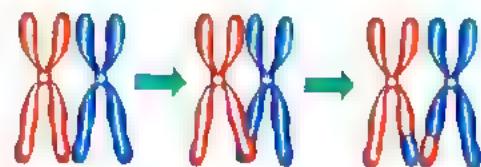


d.

B Choose from the following table what is suitable for each of sentences :

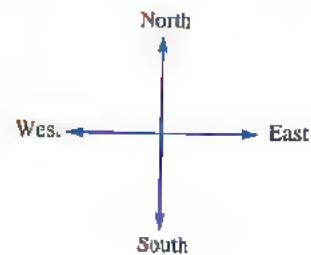
The first Metaphase	Convex mirror	4 metre	Concave lens
The first prophase	1.5 m/s	Crossing over phenomenon	1.5 metre
90 m/s	Budding	2.5 metre	Concave mirror

1. A person rides his bicycle 120 metres in the first minute, then 60 metres in the second minute, so his average speed during this trip is
2. An object is placed in front of a plane mirror at a distance of 1.5 metres from it, then it moves 0.5 metres away from its first position, so the distance between the object and its second image is
3. The phenomenon shown in the figure is called , it occurs at the end of the
4. A student makes an experiment to burn a piece of paper using sunlight, so is used.



C A car moved a distance of 40 metres towards the south through half a minute and then moved to the west a distance of 30 metres through 20 seconds.

1. Find the displacement.
2. Calculate its velocity in units of (m/s).



12 Ismailia Governorate

Answer the following questions :

Question 1

A Choose the correct answer :

1. When a body moves with zero acceleration, this means that
 - a. the speed of the body is uniform.
 - b. the speed of the body is non uniform.
 - c. the speed of the body increases.
 - d. the speed of the body decreases.

Part 3

2. The real image is always
a. enlarged. b. upright. c. inverted. d. small.
3. Within minutes after of the Big Bang, the atomic particles merged together producing two gases, which are
a. hydrogen and nitrogen. b. oxygen and hydrogen.
c. nitrogen and helium. d. hydrogen and helium.
4. Nano-molecule of metal are used to detect the infected cells with cancer.
a. zinc b. gold c. iron d. nickel

B Write the scientific term for each of the following sentences :

1. A disease infects the eye lens making it opaque.
2. The nucleic acid, which carries the genetic information for the living organism.
3. The straight line that passing through the centre of curvature of the mirror and any point on its reflecting surface except its pole.
4. The distance covered at a certain direction.

C Answer :

If a car moves at a speed of 80 km/h and it seems to an observer at a speed of 30 km/h, so the speed of the moving observer is km/h and in the direction.

Question 2

A Complete the following sentences with suitable words :

1. The cells in the human body don't divide at all.
2. The speed of a moving body increases when the time needed to cover a certain distance
3. Galaxies are formed from groups of
4. When the object position changes as time passes according to the position of another fixed object, we can say that the object is in a state of

B Correct the underlined words :

1. The opposite figure no. (1) shows the metaphase in the cell division.
2. The graph no. (2) represents a body moves at uniform speed.
3. The speed of a car can be identified directly by using compass.
4. The lens is transparent medium that reflects the light and is defined with two spherical surface.

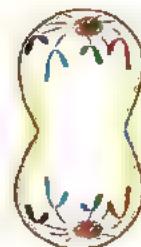


Fig.(1)

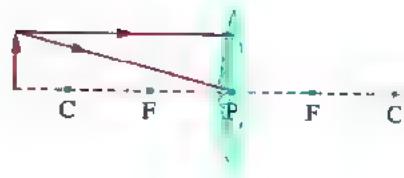


Fig.(2)



C Answer :

Redraw the opposite figure in your answer sheet, then complete the drawing and mention the properties of the image.

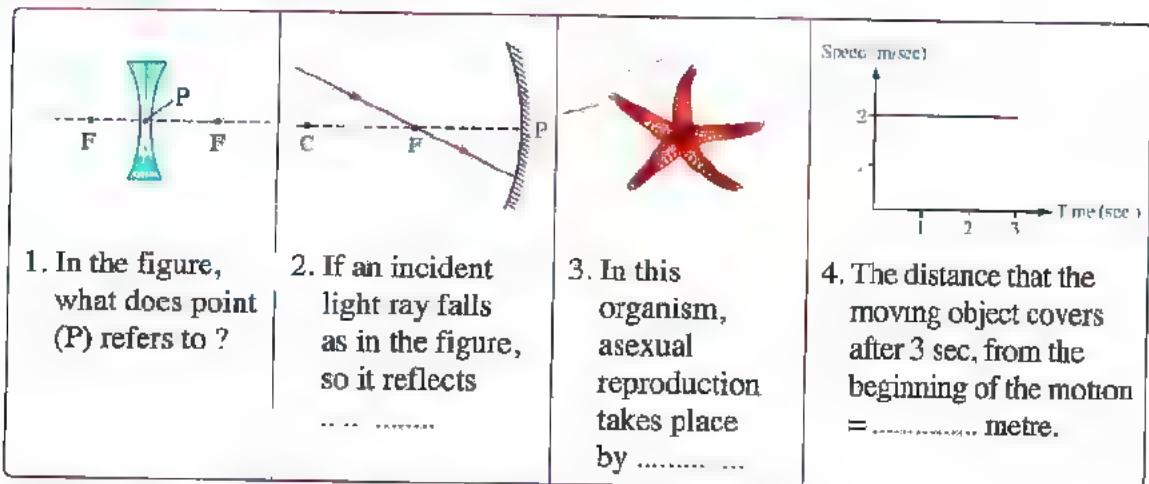


Question 3

A Mention the link or the relation between the following words or sentences :

1. The Sun – The Saturn – The Earth.
2. m/sec. – km/h. – m/min.
3. Reproduction by a part of the stem – Reproduction by a part of the root – Reproduction by tissue culture.
4. Increase in the eyeball diameter – Increase in the convexity of the eye lens surface – The rays collect in front of the eye retina.

B Study the following figure then answer :



C Give reasons : Interphase has an important role in cell division.

Question 4

A Compare between the following :

1. Mass and force. (according to the kind of the physical quantity).
2. The concave mirror and the convex mirror. (according to the position of the center of curvature).
3. Nebular theory and Big Bang theory. (concerning the aim of the theory).
4. The animal cell and the plant cell. (according to the way of formation of the spindle fibers).

B What are the results of ...?

1. A light ray falls perpendicular on a plane mirror surface.
2. An object is put at the focus of convex lens.

Part 3

3. The direction of the plane motion is opposite to the direction of the wind.
(concerning the time of the flight and the amount of consumed fuel).

4. At the end of prophase I parts of the two inner chromatids of each tetrad are exchanged.

 C Answer :

An object moves with speed 10 m/sec, under the effect of uniform acceleration equals 2 m/sec², Calculate the time taken by an object to become its speed 40 m/sec.

13 Suez Governorate

Answer the following questions :

Question 1

A Complete the following sentences:

1. The measuring unit of acceleration is
2. The radius of the concave mirror equals of its focal length.
3. The scientist who established the nebular theory is ..
4. Spindle fibers begin to shrink in the of mitosis.

B Put (✓) or (✗) in front of the following statements :

1. The irregular speed is the speed by which the object moves when it covers equal distances at equal periods of time. ()
2. The optical centre is a point inside the lens that lies on the principal axis. ()
3. The virtual image can be received on a screen. ()
4. The crossing over phenomenon plays an important role in the variation of genetic traits among the individuals of the same species. ()

C Choose the correct answer :

If the speed of a body increases regularly, its acceleration

Question 2

A Correct the underlined words :

1. **The relative speed** represents the regular speed by which the object moves to cover the same distance at the same period of time.
2. **The displacement** is the change of an object's speed in one second.
3. The two gases that produced galaxies, stars, and the universe over millions of years are hydrogen and oxygen.
4. **The budding** is the ability of some animals to compensate their missing parts.



B Study the following figures, then complete the following sentences :

1. The graph represents the state of an object at ...	2. The graph represents the state of an object at ...	3. The figure represents a lens	4. In mitotic division, this phase is ...

C Give a reason for :

The object that is placed at the focus of a convex lens doesn't form an image.

Question 3

A Write the scientific term of each of the following statements :

1. The change of an object position as time passes according to a fixed position.
2. A vision defect results due to the decrease in the eyeball diameter
3. A theory that explains the origin of the universe from a massive explosion since 15000 million years.
4. The most common type of reproduction especially in higher living organisms.

B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. The nucleus of the cell	a. is always less than or equal to the displacement.
2. The force	b. contains the genetic material of living organisms.
3. The Milky Way	c. is always greater than or equal to displacement.
4. The distance	d. contains the Sun and solar system.
	e. is a vector quantity.

C What is the chemical structure of the chromosome ?

Question 4

A Choose the correct answer in each of the following :

1. is a scalar physical quantity.
 - Time
 - Negative acceleration
 - Displacement
 - Positive acceleration

Part 3

2. The image of an object placed in front of a convex mirror is always the object.
a. greater than b. smaller than c. equal d. double
3. The solar system is located in one of the arms of the Milky Way galaxy.
a. curved b. straight c. spiral d. spherical
4. The changes that occur in the of mitotic division are called adverse changes.
a. interphase b. prophase c. telophase d. metaphase

B Put the following numbers in front of what suits them in the sentences below :

(1 – 2 – 4 – 5 – 6)

1. The average speed of a body during two seconds if it moves at a uniform speed of 2 m/s. (.....)
2. The number of the principal axes of a convex lens. (.....)
3. The length of an image for an object whose length is 5 cm placed between the focus and the center of curvature of a concave mirror. (.....)
4. The number of cells resulting in the final phase of the second meiotic division. (.....)

C In the opposite figure :

A body moves and covers a distance of 30 metres from point (A) to point (B) in 3 seconds, then reverses its direction and covers 10 metres to point (C) in 2 seconds. Calculate the velocity.



14 | Port Said Governorate

Answer the following questions :

Question 1

A Choose the correct answer in each of the following :

1. The two basic factors that can be used to describe the movement of an object are
a. speed and time. b. displacement and speed.
c. area and time. d. distance and time.
2. A car at rest, its speed increased to 32 m/sec. after 8 seconds, its acceleration will be m/sec².
a. 0.25 b. 4 c. 8 d. 24
3. The phenomenon of crossing over takes place during
a. prophase I. b. metaphase I. c. anaphase I. d. telophase I
4. The scientist who suggested the nebular assumption is
a. Chamberlain. b. Molten. c. Laplace. d. Fred Hoyle.
5. Each tetrad consists of
a. 4 chromatids, 2 centromeres. b. 2 chromatids, 2 centromeres.
c. 4 chromatids, 4 centromeres. d. 2 chromatids, one centromere.



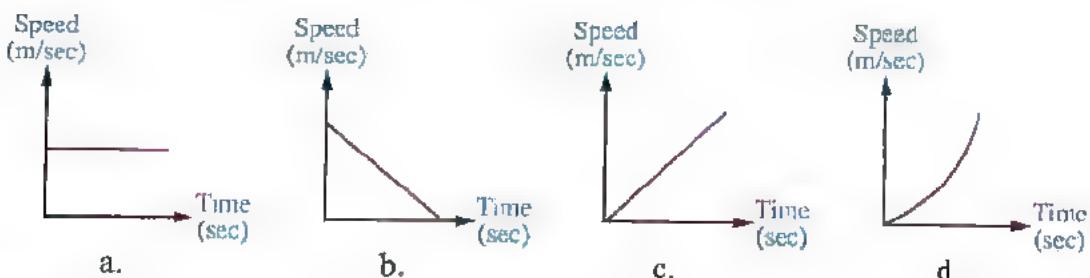
6 If the relative speed of a car is 20 km/h for an observer who moves with a speed of 40 km/h in the same direction of the car, the actual speed of this car will be km/h.

a. 30 b. 40 c. 60 d. 80

7. is (are) located in one of the spiral arms of the Milky Way galaxy.

a. Galaxies b. The solar system c. Moons d. Stars

8. Which of the following graphs represents the movement of a car when the driver uses its brakes ?



9. It is better to refer to the non-uniform speed by the term of

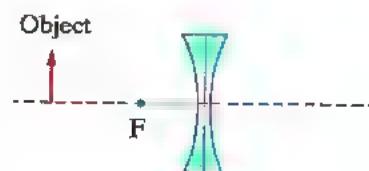
a. relative speed. b. speed. c. velocity. d. average speed.

10. If a person took a time of 10 minutes to travel from his house to his workplace and he covered a distance of 1800 metres, his speed will be equal to.....

a. 1 km/h. b. 1 m/s. c. 3 km/h. d. 3 m/s.

11. In the opposite figure, the type of the lens used is and the properties of the image are

a. convex, virtual and diminished.
b. concave, real and diminished.
c. concave, virtual and diminished.
d. convex, real and diminished.



12. The parental individual disappears in case of reproduction in

a. amoeba. b. yeast. c. bread mould. d. starfish.

13. Which of the following are considered as scalar physical quantities ?

a. Length and acceleration. b. Mass and displacement.
c. Radius and distance. d. Time and velocity.

14. If the number of chromosomes in a pollen grain of a pea flower is 7, the number of chromosomes in a leaf cell of the same plant will be

a. 7 b. 14 c. 21 d. 28

15. The cell prepares for the start of meiotic cell division by the duplication of its genetic material during

a. interphase b. prophase I c. metaphase I d. telophase

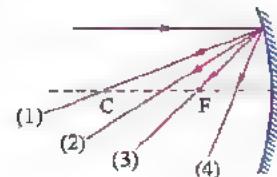
Part 3

16. The centromere of each chromosome splits lengthwise into two halves and the two chromatids separate from each other during the

- a. prophase.
- b. telophase.
- c. anaphase I.
- d. anaphase II.

17. In the opposite figure, the reflected ray is number

- a. 4
- b. 3
- c. 2
- d. 1



18. Cancer cells can be detected by using nano-molecules of

- a. copper.
- b. iron.
- c. gold.
- d. nickel.

19. The theory that based on, when a star glows for a short time and then its glow disappears is the theory.

- a. Modern
- b. Crossing star
- c. Chamberlain and Moulten
- d. Nebular

20. If an object its height is 2.5 cm is placed at a distance of 10 cm from a concave mirror its radius of curvature is 30 cm, the image formed for this object will be

- a. upright, its height is 1.5 cm.
- b. inverted, its height is 1.5 cm.
- c. real, its height is 7.5 cm.
- d. virtual, its height is 7.5 cm.

21. Displacement is a physical quantity, its unit is

- a. m.
- b. m.s.
- c. m/s.
- d. m/s²

22. Some plants can reproduce vegetatively (asexually) without need for

- a. leaves.
- b. seeds.
- c. roots.
- d. stems

23. When an object is placed in the position shown in the figure, the image formed for this object will be



- a. at C₁
- b. at F₂
- c. after C₂
- d. between F₂ and C₂

24. The graphic representation (..... – time) for an object that moves with a regular speed is represented by a straight line that is parallel to the time axis.

- a. distance
- b. acceleration
- c. displacement
- d. speed

25. When an object its height is 4 cm is placed at a distance of 8 cm from a convex mirror, the height of the image formed by the mirror will be cm.

- a. less than 4
- b. 4
- c. 8
- d. 16

26. The of the wind is considered by the plane pilots when they fly.

- a. average speed
- b. velocity
- c. relative speed
- d. speed

27. The two gases which produced the stars and the galaxies in the ratio 1:3, respectively, are

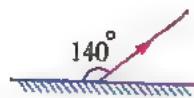
- a. helium and nitrogen.
- b. hydrogen and helium.
- c. helium and hydrogen.
- d. oxygen and nitrogen.



28. In the opposite figure, if the angle between the reflected light ray and the mirror surface is 140° , the angle of incidence will be

a. 20° b. 30° c. 40°

d. 50°



B Answer the following questions :

29. The opposite figure is for an object that moved from point (a) to point (d) passing through points (b) and (c). Find its velocity.

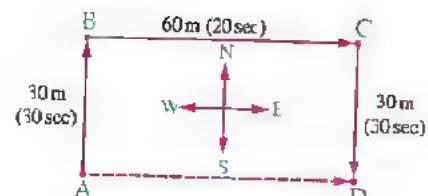
30. **Give reasons :** The human life could continue if a part of his liver is cut.

31. **Compare between** short-sightedness and long-sightedness (in terms of their correction).

32. Show by drawing the graphic representation (distance-time) for an object which moves with regular speed and stopped moving for a period of time.

33. **What is meant by** regeneration in living organisms ?

34. **Mention** the first law of light reflection.



15 Fayoum Governorate

Answer the following questions :

Question 1

A Choose the correct answer in each of the following :

- Person covered a distance of 300 metre in 20 seconds he returned back to a starting point in 40 seconds, the average speed for this person during the whole trip =
 a. 10 m/s b. 30 m/s c. 50 m/s d. 60 m/s
- Concave mirror with diameter is 20 cm to get magnified virtual image for an object by using this mirror, we put the object at distance from mirror.
 a. 3 cm b. 5 cm c. 10 cm d. 20 cm
- When a star glows and explodes, this is due to
 a. chemical reaction. b. nuclear reactions.
 c. burning gases. d. glowing gases.
- Mitosis leads to the
 a. formation of pollen grains. b. formation of ova.
 c. formation of sperms. d. growth of living organism.

B Put (✓) in front of the right statements and (✗) in front of the wrong one :

- Budding is a type of reproduction that occurs in multicellular organisms like yeast fungus.

()

Part 3

2. If the object moves with uniform speed, its acceleration = zero ()
3. Concave lens is thin at its centre and more thick at the tips. ()
4. The spherical mirror has many principal axes. ()

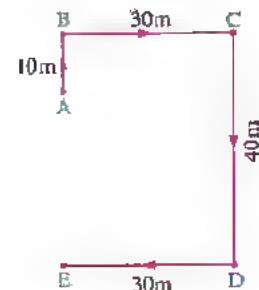
C In the opposite figure :

A person moves in the path (A – B – C – D – E) in 6 sec. find :

The difference between the value of distance

and value of displacement =

The velocity =



Question 2

A Write the scientific term for each of the following statements :

1. The methods which are used by physicists to predict the relation between certain physical quantities.
2. The force that controls the movement of planets around the Sun according to the modern theory.
3. The point at which two chromatids of chromosome connected together.
4. The object that its position doesn't change with passing time.

B Correct the underlined words :

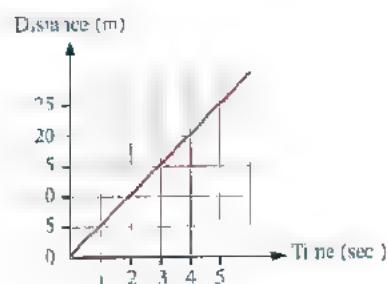
1. The spindle fibers appear during interphase.
2. The value of the object's speed relative to the observer standing on the ground is greater than its real speed.
3. The plane mirror is used at corner narrow roads to monitor the movement of cars.
4. When object covered the double distance at the same time so, its speed remained constant.

C A concave mirror has its focal length equal 4 cm. An object with length 3 cm is placed at a distance of 8 cm from this mirror; explain by drawing only two light rays to form the image for the object, then find the length of image and the distance between the image and the mirror.

Question 3

A Complete the following sentences :

1. From the figure, the time to cover 20 m = sec.
and the type of speed is
2. The focus of the convex lens is , while the
focus of the concave lens is
3. The scientist who established the nebular theory is ,
while Fred Hoyle established the theory.
4. In flowering plants the male gamete is , while the female gamete is





B Write the number which indicates the following :

1. The angle of reflection if the angle between the incident light ray and the surface of plane mirror = 90°
2. The number of chromosomes in a cell of an ovary, if the number of chromosomes in a cell of its skin equals 12.
3. Speed of moving car which covers 72 km in 60 minutes with unit m/s.
4. The shortest distance at which person with normal vision sees images clearly.

C Give reason the crossing over phenomenon is a source of genetic variation.

Question 4

A Choose from column (B) what suits it in column (A) :

(A)	(B)
1. We can determine directly speed of cars by	a. the eye cornea.
2. Earliest life forms began to appear on the Earth	b. compass.
3. The parent individual disappears during reproduction of	c. the eye retina.
4. The contact lenses can stick to	d. speedometer.
	e. bacteria.
	f. before formation of galaxies.
	g. after formation of solar system.

B Exclude the unsuitable word or sentence and mention what the rest has in common :

1. Time of trip – Gravitational force – Distance of road – Mass of object.
2. Upright – Equal to the object – Reversed – Real.
3. Bread mould – Mushrooms – Paramecium – Some algae.
4. Convex lens – Concave lens – Formation of image behind the retina – Decrease of the radius of the eye sphere.

C Car moves with negative uniform acceleration = 4 m/s^2 , when the brakes are used to stop the car after 20 sec find the speed of the car at the moment of starting use brakes.

16 Beni-Suef Governorate

Answer the following questions :

Question 1

A Complete the following sentences :

1. The age of the Sun until this moment is about million years.
2. Bread mould fungus produces by
3. Vision defect which is due to increase in the convexity of the eye lens surface is treated with

Part 3

4. When the final speed of an object is less than its initial speed, it means that it is moving with a acceleration.

B First : If an object is placed at a distance of 8 cm from the pole of a mirror, a real and magnified image is formed for it.

Choose the correct answer from the following :

1. Type of mirror (concave – convex – plane – diverging).

2. If the object moves a distance of 2 cm, a real and equal image is formed for it. The focal length of the mirror = (5 – 8 – 10 – 12) cm.

Second :

1. What is the number of cells resulting from three consecutive divisions of a pancreas cell ?

2. Calculate the initial speed of an object moving with a negative acceleration = 5 m/s², stopping after 4 seconds.

C Place from the words (greater than, less than, equal to) that suit the following sentence :

The speed of a train moving at a speed of 216 km through three hours the speed of a car moving at a speed of 25 m/s.

Question 2

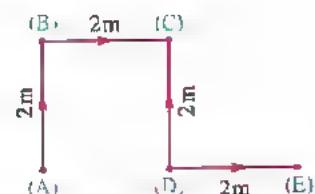
A Correct the underlined words :

1. The star explosion phenomenon is related to the sudden chemical reactions in the star.
2. When a moving object covers the same distance in half the time, its speed decreases to quarter.
3. The phase in which chromosomes arranged at the cell's equator is the anaphase.
4. The average speed can be expressed mathematically as the total distance multiplied by the total time.

B Choose the correct answer from the brackets :

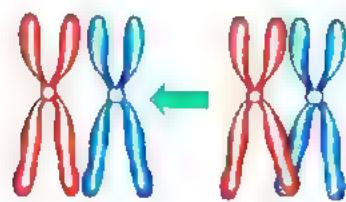
1. When an object is placed at a distance less than the focal length of a convex lens, its image is (real and magnified / real and diminished / virtual and diminished / virtual and magnified).
2. To determine time it's enough to know .. (direction only / magnitude only / direction and measuring unit / magnitude and direction).
3. According to the opposite figure :

If an object moves from point (A) to point (E) passing through points (B), (C), and (D), then the value of the distance covered is (quarter / half / equal / double) the value of the displacement.





4. The phenomenon illustrated in this figure by the first meiotic division occurs in the
 (prophase I / metaphase I / anaphase I / telophase I)



C An object placed at 4 metres away from a plane mirror, if it moves 1 metre toward the mirror, what is the value of the distance between the object and its image after it moves.

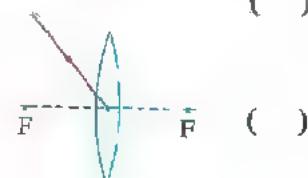
Question 3

A Write the scientific term for the following expressions :

1. A type of asexual reproduction where the parental individual disappears.
2. Groups of galaxies are rotate together by the effect of gravity in cosmic space.
3. The line connecting the two centers of curvature of the lens' surface passing through the optical center of the lens.
4. The speed at which the object covered unequal distances at equal periods of time.

B Put (✓) or (✗) in front of the following statements :

1. The image formed by a convex mirror is always real and erect. ()
2. If the number of chromosomes in a skin cell is $(2N)$, then its number in an ovary cell is $(2N)$. ()
3. Measuring the relative speed of a moving object depends on the observer's state and the direction of its movement. ()
4. The illustrated light ray in the opposite figure passes and refracts parallel to the principal axis of the lens. ()



C Choose from the words :

(Testis - Cytoplasm - Anther - Centrosome) the part which is responsible for formation of the male gametes in the flowering plants.

Question 4

A Extract the odd word in each of the following :

1. Zygote - Ovum - Sperm - Pollen Grain.
2. (km/h) , (m/s) , (km/s) , (m/s^2) .
3. Nebular theory - Crossing Star theory - Big Bang theory - Modern theory.
4. At cars Park - In front light of cars - At shopping centers - On the narrow road corners

B Give one example for each of the following :

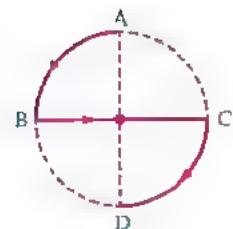
1. Unicellular living organism that reproduces by budding.
2. An optical piece that gives an inverted image to the original object.
3. A method used by physicists to describe physical phenomena in an easy way.
4. An optical piece that is used to correct vision defects instead of the medical glasses and is placed on the cornea of the eye.

Part 3

C A car moves in a circular path with a diameter of 14 metres from point (A) to point (D), passing through points (B), (C) in 10 seconds as illustrated.

Calculate the speed.

Given that (Circumference of the circle = $2\pi r$, Where $\pi = \frac{22}{7}$).



17 Minia Governorate

Answer the following questions :

Question 1

A Write the scientific term :

- 1 A vision defect is due to the formation of the image of far objects in front of the retina of the eye.
2. A phenomenon contributes in genes exchanging between the two homologous chromosomes' chromatids, and distributing them randomly in the gametes.
3. The change in the position of the object relative to the position of another fixed object by the time passes.
4. The space which contains all the galaxies, stars, planets, moons, and living organisms.

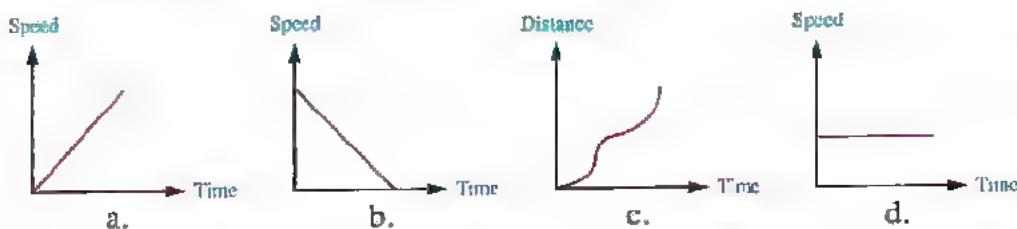
B Complete the following statements with the suitable from the following words between the brackets :

(Interphase – 4 m/s^2 – Metaphase – 80 cm – on itself – 6 m/s^2 – parallel to principal axis – 180 cm)

1. The genetic material duplicates in a phase called
2. A car starts its motion from rest till its speed reaches 24 m/s after 6 seconds, so its acceleration of motion equals
3. The incident light ray passing through the center of curvature of a concave mirror, so it reflects
- 4 A person of 180 cm tall stands in front of a plane mirror, so the length of his image equals

C Study the following graphs, then answer :

Which of the following graphs represents the movement of an object at zero acceleration ?





Question 2

A Choose the correct answer for each of the following :

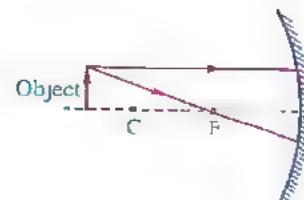
1. An object moves a distance of 20 metres in a straight line in one direction, so the amount of its displacement is
 a. 20 metres. b. 50 metres. c. 60 metres. d. zero.
2. Flying in the same direction of the wind leads to all of the following except
 a. decreasing the time of the trip. b. decreasing the amount of the fuel consumed.
 c. increasing the time of the trip. d. increasing the velocity of the plane.
3. The percentage of helium gas was formed within minutes after Big Bang is
 a. 3 % b. 25 % c. 50 % d. 75 %
4. The reproduction by budding occurs in multicellular living organisms such as
 a. yeast fungus. b. mushroom fungus.
 c. bread mould fungus. d. sponge.

B Correct the underlined words in the following statements :

1. When a body moves at uniform negative acceleration, this means that its final speed equals its initial speed.
2. Nucleolus and nuclear membrane disappear at the end of anaphase of mitotic division.
3. Plane mirrors are used in marine lighthouses that are found at marine ports to guide ships.
4. A train moves with a speed 20 m/s, this means that it covers 200 metres within time 4 seconds.

C In the opposite figure :

Draw the opposite diagram in your answer paper, and complete the path of light rays to obtain an image of object, then mention the properties of the formed image.



Question 3

A Cross out the odd word in each of the following :

1. Mass – Force – Distance – Length.
2. Virtual image – Upright – Real image – Behind the mirrors.
3. Nebular theory – Big Bang theory – Crossing star theory – Modern theory.
4. Amoeba – Paramecium – Bacteria – Hydra.

Part 3

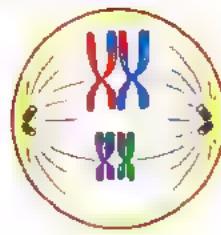
B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Fertilization	a. the distance covered at a certain direction from the primary position of movement towards its final position.
2. Contact lens	b. it always forms virtual images for objects.
3. The displacement	c. it is used to treat the vision defects instead of medical glasses.
4. Convex mirror	d. it is the combination of a male gamete and a female gamete to form a zygote.
	e. it always forms real images for objects.

C From the opposite figure, answer :

What is the type of the cell division that this figure belongs to ?

And what is the importance of this cell division ?

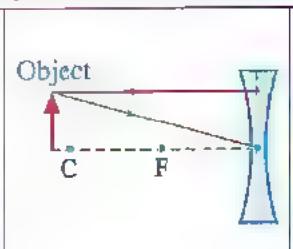
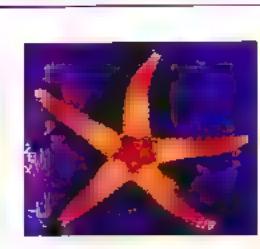
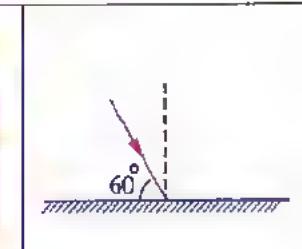


Question 4

A Put (✓) or (✗) in front of the following statements :

- When the observer is moving in the same direction of the moving object at the same speed, so the relative speed of moving object equals zero. ()
- If the distance between the two centers of curvature of lens is 16 cm, so its focal length equals 8 cm. ()
- The earliest life forms began to appear on the Earth within minutes after the massive explosion. ()
- The sexual reproduction is considered as a source of genetic variation. ()

B Study the following figures, then complete statements below :

 1. The graph represents an object	 2. The image of object is erect and diminished.	 3. This organism reproduces asexually by	 4. Angle of reflection = °
--	--	---	--

C A car moves with a uniform speed 90 m/sec. If the driver used the brakes, so its speed decreases by 5 m/sec^2 .

Calculate : Car speed after 12 seconds from the moment of using the brakes.



18 Assiut Governorate

Answer the following questions :

Question 1

A Complete the following statement by the suitable words :

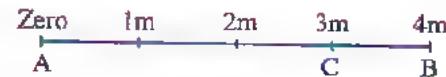
1. The vision defect which results from increasing in the convexity of the eye lens's surface is called
2. The difference between velocity and displacement is in
3. The Sun takes about .. to complete one rotation around the centre of the galaxy
4. The meiotic division in flowering plants occurs in the anther to produce

B Put (✓) in front of the right statements and (✗) in front of the wrong one :

1. Unicellular protozoans reproduce by binary fission. ()
2. When the light ray falls by an angle equals zero on the reflecting surface so, the reflected light ray will be perpendicular on the reflecting surface ()
3. Two cars move in the opposite direction with speed 100 km/h for each, so the speed of the second car as estimated by the driver of the first car equals zero. ()
4. The focus is a point inside the lens that lies on the principal axis. ()

C In the opposite figure if a person moves from point (A) to point (B) and returns to point (C) calculate :

1. Total covered distance =



2. Displacement =

Question 2

A Choose the odd one word (or statement) out and write the relation between rest statements or words :

1. Force – Acceleration – Mass – Displacement.
2. Simple algae – Bacteria – Paramecium – Sponge.
3. Nebular theory – Crossing star theory – Big Bang theory – Modern theory.
4. (m/sec) – (km/h) – (m/min) – (m/sec^2)

B Write the scientific term of each of the following :

1. A moving object covers equal distance at unequal periods of time.
2. The ability of some animals to compensate their missing parts.
3. It is any straight line that passes by centre of curvature of mirror and any point on its reflecting surface except the pole of the mirror.
4. The speed of a moving object relative to a static or a moving observer.

Part 3

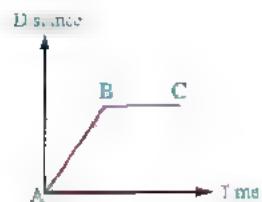
C Give reasons for the following :

1. The object that is placed at the focus of a convex lens doesn't form an image.
2. The concave mirror is used to produce heat.

Question 3

A Choose the correct answer from the given answers :

1. An object was put at 10 cm from a concave mirror, a real inverted and equal image was formed, if the object moved 3 cm towards that mirror, so the formed image will be
a. real, inverted and diminished. b. virtual, upright and diminished.
c. real, inverted and enlarged. d. virtual, upright and enlarged.
2. The vegetative reproduction occurs in plants without the need to
a. leaves. b. seeds. c. roots. d. stems.
3. In the opposite figure, the magnitude of object's speed in period (BC) equals the magnitude of its in period (AB).
a. speed b. acceleration
c. distance d. time
4. According to the Big Bang theory, within minutes from the origin of the universe, the ratio of hydrogen to helium gases, respectively was
a. 1 : 1 b. 1 : 2 c. 1 : 3 d. 3 : 1



B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Concave mirror	a. the change of an object position as time passes according to the position of another object.
2. Bread mould fungus	b. used at cars' parking.
3. Convex mirror	c. reproduces asexually by regeneration.
4. Acceleration × time	d. The dentist uses it during the examination.
	e. change of an object speed.
	f. reproduces asexually by producing spores

C Study the following figures, then answer the question :

Fig. (1)



1. The follows the phase shown in the figure.
2. This phase belongs to division.

Fig. (2)



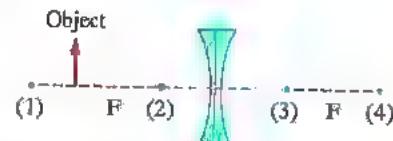
1. The name of this figure is
2. The type of asexual reproduction is

Question 4**A** Correct the underlined words in the following sentences :

1. Crossing over phenomenon occurs at first anaphase.
2. The contact lenses are put directly on eye retina and can be removed easily.
3. Sudden violent chemical reactions occur within the star which lead to its explosion.
4. It is possible to identify the speed of the car directly by using compass.

B Write the number which refers to :

1. The number of chromosomes in a fertilized ovum of an animal, if the number of chromosomes in its sperm is 16 chromosomes.
2. The radius of spherical mirror that its focal length equal 5 cm.
3. The speed of a car covering a distance of 1200 metres in a half minute.
4. The position where a virtual, erect and diminished image is formed in the opposite figure.

**C** On a straight line there is a car moves by 90 km/h then the brakes are applied, the car stops after 10 seconds.

- A. Calculate the acceleration with which the car moved from the moment the brakes were applied.
- B. Mention the type of acceleration.

19 | Sohag Governorate

Answer the following questions :

Question 1**A** Complete the following sentences :

1. The Sun takes about 220 million years to complete one rotation around the centre of
2. A car moves at speed of 180 Km/h so its speed equals m/sec.
3. Each chromosome consists of two threads, each thread is called
4. A virtual, upright and reversed image can be formed by, mirror.

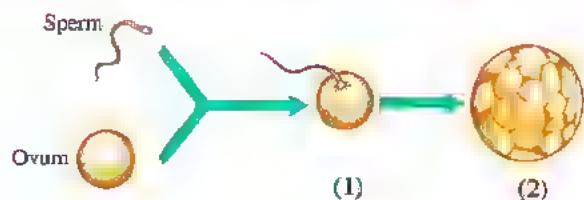
B Put (✓) or (✗) :

1. The virtual image cannot be received on a screen. ()
2. The time is a scalar physical quantity. ()
3. The universe merged from the particles of oxygen and nitrogen. ()
4. The genetic material in the cell duplicates in the prophase. ()

Part 3

C The opposite figure represents one of the important processes to complete the reproduction :

1. The process that represented in number (1) is
2. The name of the resulting cell in number (2) is



Question 2

A Write the scientific term :

1. A point inside the lens that lies on the principal axis in the mid distance between its two faces.
2. Exchange of some parts of the two inner chromatids in a tetrad.
3. The object speed decreases by time.
4. The speed of a moving object relative to a static or a moving observer.

B Extract the odd word:

1. Pollen grain – Testes cell – Ovum – Sperm.
2. Kilometre / hour – Metre / second – Metre / minute – Metre / second².
3. Hydra – Bread mould fungus – Sponge – Yeast fungus.
4. Real – Virtual – Upright - Magnified.

C Within 2.5 seconds the speed of a car increases from 15 m/sec. to 25 m/sec., while a bike moves from rest and its speed 5 m/sec. in the same time.

Calculate : 1. The acceleration of car and the acceleration of bike.
2. Which one moves at greater acceleration ?

Question 3

A Correct the underlined words :

1. The convex mirror always forms an inverted and small image.
2. The simplest type of motion is the motion in curved line.
3. It is hard to measure average speed practically.
4. The glowing and explosion of stars, is due to chemical reaction.

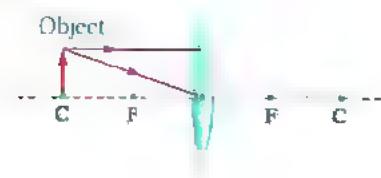
B Choose from column (B) what suits it in column (A) :

Group (A)	Group (B)
1. Pollen grain	a. is used to treat short-sightedness.
2. Concave lens	b. is the displacement in one second.
3. Laplace	c. founder of nebular assumption.
4. Velocity	d. gamete that is produced by the germination of anther in the flowering plants.
	e. founder of the modern theory of the world.



C Draw the opposite figure in your answer paper then :

1. Draw the refracted light rays to obtain an image for the object.
2. Mention the properties of the formed image.



Question 4

A Choose the correct answer :

1. If the focal length of a concave mirror is 5 cm so, its diameter equals
a. 5 cm b. 10 cm c. 15 cm d. 20 cm
2. The parental individual disappears when reproduction occurs in the
a. sporogony. b. regeneration c. binary fission. d. budding.
3. The length of actual path covered by a moving body from the starting point to the ending point of motion is
a. displacement. b. acceleration. c. speed. d. distance.
4. When light ray falls on a plane mirror with an angle of 45° so, the angle of incidence equals
a. 90° b. 45° c. 60° d. 30°

B Write the number that corresponds to each statements :

1. The number of cells resulting from mitosis.
2. Train moves at speed 100 Km/h and covers a distance 40 km. Find the time.
3. The distance between person and his image if he stands a distance of 3 m from plane mirror.
4. Period time from the Big Bang until appearance of the universe as we know it today.

C Give reasons for :

1. The force is considered a vector physical quantity.
2. The object that is placed at the focus of a convex lens has no image.

20 Qena Governorate

Answer the following questions :

Question 1

A Complete the following sentences :

1. If the uniform speed of a car is 72 Km/h, this means that its speed equals m/sec.
2. Spindle fibers in the animal cell, are formed from
3. galaxy contains millions of stars where the Sun is one of them.
4. The dentist uses mirror during the examination.

Part 3

B Cross out the odd word:

1. Force – Acceleration – Displacement – Time.
2. Equal to the object – Virtual – Inverted – Reversed.
3. Pollen grains – Ovules – Sperms – Anthers.
4. Real inverted diminished – Real inverted equal to the object – Real inverted magnified – Virtual inverted equal to the object.

C Choose the correct answer :

A train moved with speed 40 m/sec., when the driver used the brakes, the train gained negative uniform acceleration 8 m/sec^2 . The time needed to stop the train since using the brakes is

a. 10 sec. b. 5 sec. c. 7 sec. d. 6 sec.

Question 2

A Choose the correct answer :

B Put (✓) or (✗):

1. Mass is considered a scalar physical quantity. ()

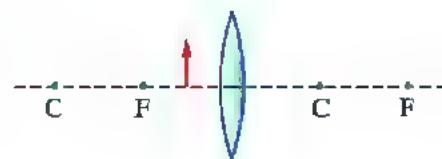
2. The simplest type of motion is the motion in curved line. ()

3. If a person stands in front of plane mirror at distance 3 metres from it, the distance between his image and the mirror is 6 metres. ()

4. Somatic cells are divided by mitotic division. ()

C Draw the following figure in your answer paper.

draw the path of incident rays from the object on the lens to get an image for the object and write the properties of the formed image.



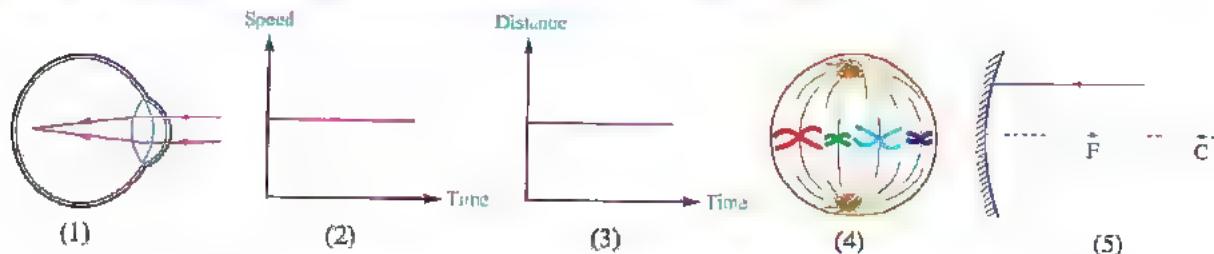


Question 3

A Write the scientific term for each of the following statements :

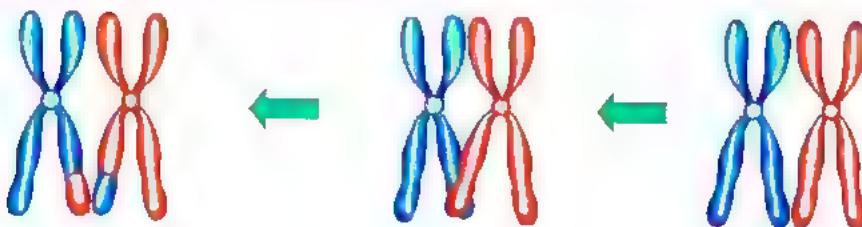
1. Speed of moving object relative to a static observer
2. It includes all galaxies, stars, planets and living organisms.
3. Area of connection of two chromatids of chromosome.
4. The angle between the reflected light ray and the line perpendicular at point of incidence on the reflecting surface.

B Study the following figures then complete the following :



1. The vision defect in figure (1) can be corrected by using lens.
2. The figure number describes the state of a static object.
3. The figure (4) represents
4. The incident light ray on concave mirror in figure (5) reflects passing through

C The following figure represents a biological phenomenon. What is the name of this phenomenon and what is its importance ?



Question 4

A Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Vegetative reproduction	a. the object covers equal distances at equal periods of time.
2. Convex mirror	b. they are groups of stars in the universe.
3. Regular speed	c. it can occur by different parts of the plant except seeds.
4. Galaxies	d. it converges light rays falling on it.
	e. it is put on the left side of the driver of the car.

Part 3

B Correct the underlined words :

1. The lens is transparent medium that reflects the light and it is limited by two spherical surfaces.
2. Pollination process is the combination of a female gamete and a male gamete to form a zygote.
3. Acceleration is the result of multiplying of the speed of moving object by the time.
4. Center of mirror curvature is the point that is in the middle of the reflecting surface of the mirror.

C How can you explain ?

Physicists use mathematical relations like graphs and tables.

21 | Luxor Governorate

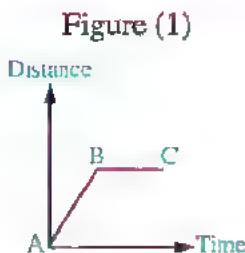
Answer the following questions :

Question 1

A Complete the following sentences :

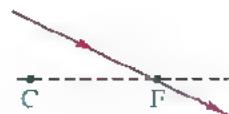
1. A theory that explains the origin of the universe based on the sciences of physics and astronomy is
2. The focal length of the thick convex lens is the focal length of the thin convex lens.
3. The reproduction does not require special systems or structures in the living organisms.
4. It is practically difficult to an object to move with speed.

B Study the following figure, then answer :



The time interval during which the body is at rest

Figure (2)



The incident light ray reflects

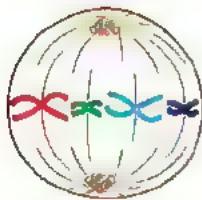


Figure (3)

This figure represents

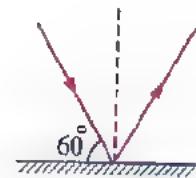


Figure (4)

The angle between the incident light ray and the reflected light ray equals

C The following mathematical relationship includes three physical quantities.

$$\text{Average velocity} = \frac{\text{Displacement}}{\text{Total Time}}$$

What is the number of the vector physical quantities in this relation, what are these quantities ?

Question 2

A Write the scientific term of each of the following :

1. The change of an object position (location) according to the position of another fixed object as the time passes.
2. The phenomenon that contributes in the exchange of genes between the two homologous chromosome's chromatids and distributing them randomly in the gametes.
3. The continuous separation between galaxies in the space as a result of their regular movement.
4. The distance covered at a certain direction.

B Put the suitable word of these words in the following spaces :

(double – half – quarter – equals to)

1. The relative speed of a moving object relative to an observer at rest its real speed.
2. The number of the resulting cells from mitosis the number of the resulting cells from meiosis.
3. The radius of mirror curvature is its focal length.
4. When the moving object covers half the distance in double the time required to cover this distance, so the speed will decrease to of its value.

C A lens is placed in front of sun rays, a very small image is formed and can be received on the screen. What is the type of the lens ? (Give a reason).

Part 3

Question 3

A Write the number which refers to :

1. The planets in the solar system.
2. The acceleration when an object moves with a uniform speed.
3. The duplicating of the genetic material during the meiotic division.
4. The centers of curvature of the convex lens.

B Choose the correct answer :

1. The speed of the car increases to 10 times its initial speed in 3 seconds, therefore the car moves at positive acceleration equals of its initial speed.
a. quarter b. half c. double d. three times
2. The short-sightedness leads to collection of the light rays coming from the object the eye retina.
a. in front of b. on c. behind d. below
3. The reproduction in yeast fungus and starfish depend on ..
a. meiotic division. b. spore propagation. c. mitotic division. d. binary fission.
4. The real image is always
a. smaller. b. inverted. c. upright. d. magnified.

C If the nucleus of a cell contains 8 chromosomes during the prophase I,

What is number of the chromosomes in one of the resulting cells in the telophase II.

What is the importance of this cell division ?

Question 4

A Correct the underlined words :

1. The object placed at the pole of the mirror has no image.
2. When the object moves in a circular path whose radius (r) to pass the distance $(2\pi r)$, so its displacement equals ($2r$).
3. The founder of the nebular theory to explain the origin of the solar system is the scientist Fred Hoyle.
4. The gamete contains genetic material from both parents.

B Put (✓) or (✗) in front of the following sentences :

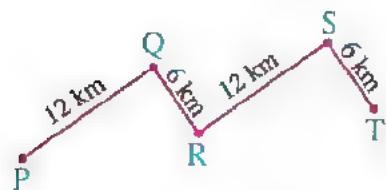
1. The person who fixes the watches uses the lenses. ()
2. An object moves from rest and its speed reaches 10 metres / second. through 2 seconds from the start of moving, the change in its speed equals 20 m/sec^2 . ()
3. The formed image by the concave lens is real. ()
4. The gametes are resulted from special cells called the reproductive cells. ()



C In the opposite figure :

A car traveled from (P) to (T) within an hour.

Calculate the average speed at which the car is moving in m/sec. ?



22 Aswan Governorate

Answer the following questions :

Question 1

A Complete the following sentences :

1. The image can be received on a screen.
2. Somatic cells are divided by division.
3. An object moves a speed of 72 Km/h equals to m/s.
4. Measuring relative speed depends on

B Choose the suitable graphs that express the following :



(a)



(b)



(c)

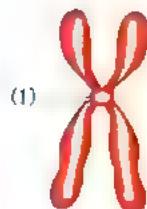


(d)

1. An object moves by regular acceleration
2. An object moves by regular speed
3. An object moves by irregular speed
4. Static object

C From the opposite figure :

Number (1) refers to



Question 2

A Write the scientific term for the following statements :

1. The physical quantity that can be determined by knowing its magnitude only.
2. The straight line that joins between the two centres of curvature of the lens passing by its optical center.
3. Change of an object position according to another fixed object as time passes.
4. It contains all galaxies, stars, planets, and living organisms.

Part 3

B Cross the unsuitable word :

1. Displacement Mass Time Length.
2. Amoeba – Paramecium – Mushroom fungus – Euglena.
3. The eye – Binocular – Solar oven Medical glasses.
4. Crossing star theory – Nebular theory – Big Bang theory – Modern theory.

C Give reason for no image is formed for an object placed at the focus of convex lens.

Question 3

A Choose the correct answer :

1. Crossing over phenomenon happens in
a. prophase 1. b. metaphase 1. c. anaphase 1. d. telophase 1.
2. The two gases that produced galaxies and stars millions years ago are
a. oxygen and helium. b. oxygen and carbon dioxide.
c. hydrogen and helium. d. hydrogen and nitrogen.
3. When an object covers equal distances in equal periods of time, that means that the object moves by
a. uniform speed. b. uniform acceleration.
c. increasing speed. d. accelerating motion.
4. Optical piece that forms real inverted equal in size image to the object is .
a. plane mirror. b. convex lens. c. concave lens. d. convex mirror.

B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Mushroom fungus	a. centre of curvature is in front of reflecting surface.
2. Yeast fungus	b. reproduce by spores.
3. Concave mirror	c. reproduce by binary fission.
4. Convex mirror	d. centre of curvature is behind the reflecting surface. e. reproduce by budding.

C Show by drawing only the formation of real, inverted and magnified image by using a convex lens.

Question 4

A Correct the underlined words :

1. Image formed by plane mirror is real.
2. Sexual reproduction keeps the same genetic structural of living organism.



3. The nucleolus disappears during mitosis division at telophase.

4. Short-sightedness is corrected by concave mirror.

B Complete the following by using the given words :

(zero – 55° – distance – displacement – speed – 90°)

- When an object moves in straight line in one direction so displacement =
- Velocity is vanished when equals zero.
- If the angle between incident light ray and reflecting surface is 35° so the angle of incidence equal =
- Perpendicular incident light ray on a concave mirror is reflected by angle =

C A car moves by speed 60 m/s when the driver use the brakes so the speed decreases by 2 m/s^2 , Calculate its speed after 10 seconds from pressing the brakes.

23

Red Sea Governorate

Answer the following questions :

Question 1

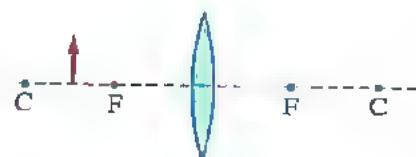
A Complete the following sentences :

- The two gases which produced galaxies, stars and universe over millions of years are hydrogen and
- The combination of a male gamete and a female gamete produces
- The optical piece that forms an upright, virtual and equal image of the object is
- The result of multiplying acceleration of moving object by the time equals change in the of moving object

B Cross out the odd word :

- Acceleration – Displacement – Force – Distance.
- Convex mirror – Inverted image – Diminished image – Virtual image.
- Production of ova – Compensation of the damaged cells – Completing the asexual reproduction – Growth of living organisms.
- Amoeba – Bacteria – Starfish – Simple algae.

C Transfer the drawing in your answer sheet, then complete the path of incident rays to form image, then mention the properties of the image.



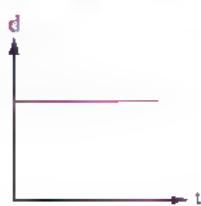
Part 3

Question 2

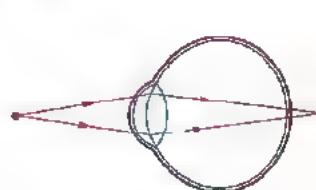
A Write the scientific term for each of the following statement :

1. The value of change in displacement at a unit time.
2. Asexual reproduction that occurs by using plant organs without needing seeds.
3. It is the wide space that contains galaxies, stars, planets and living organisms.
4. The mid point of the reflecting surface of the mirror.

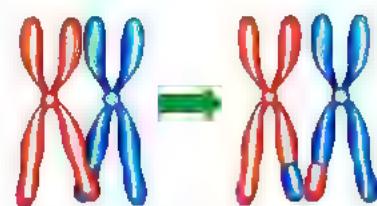
B Study the following figures, then answer :



1. The figure represents



2. The vision defect in this case is



3. This phenomenon is known as

4. This phenomenon occurs during

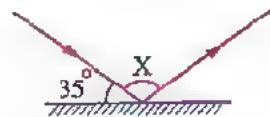
C Give reasons for :

1. The moving car with a certain speed seems to be at rest to the moving observer with the same speed and the same direction.
2. Interphase comes before cell division.

Question 3

A Choose the correct answer :

1. In the opposite figure, a light ray falls on a plane mirror so the value of angle (X) is
a. 35 b. 110 c. 55 d. 70
2. The source of genetic variation is the reproduction.
a. budding b. vegetative c. sexual d. asexual
3. An object is placed at 20 cm from a convex lens of focal length 10 cm, the image of the object is formed at a distance cm from the object.
a. less than 20 b. equals to 20 c. less than 40 d. equals to 40
4. The number of chromosomes in a male sperm is the number of chromosomes in a female ovum from the same kind.
a. equal to b. half c. double d. quarter





B Complete the spaces in the following table :

Points of comparison	$V_2 > V_1$	$V_2 - V_1$	Points of comparison	Animal cell	Plant cell
Type of acceleration	(1)	(2)	Formation of spindle fibers	(3)	(4)

C A racer covered a distance of 100 metres of a straight track in 10 seconds, then he returned back walking on foot, he took 40 seconds to come back to the starting point. **Calculate the racers average speed during the whole trip (go and return).**

Question 4

A Correct the underlined words :

1. A person moves from the starting point 20 m westward then he returns back on the same road 8 m. eastward, so the difference between the displacement and the distance equals 14 m.
2. The radius of curvature of the mirror = the focal length $\times \frac{1}{2}$.
3. The simplest type of motion is the motion in a curved line.
4. The crossing star is a big star that can be seen from the Earth.

B Mention one example for each of the following :

1. Multicellular living organism that reproduces by budding.
2. Tool used to measure the speed of car directly.
3. Gametes which are produced from the division of anther's reproductive cells of the flowering plants.
4. They are used instead of the medical glasses and can stick to eye cornea.

C What happens in the following cases ...?

1. If the nebula lost its heat according to Laplace theory.
2. The incident light ray passes through the centre of curvature of the concave mirror.

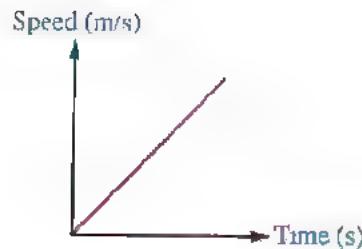
24 North Sinai Governorate

Answer the following questions :

Question 1

A Choose the correct answer :

1. The opposite graph represents the movement of an object at
 - a. positive uniform acceleration.
 - b. negative uniform acceleration.
 - c. irregular speed.
 - d. regular speed.



Part 3

2. When an object its length is 4 cm is put in front of a convex mirror, so the length of the image equals cm.

a. 16 b. 8 c. 4 d. 2

3. The continuous expansion of the universe is due to as the time passes.

a. separation of galaxies b. approaching of galaxies
c. stability of galaxies d. merged of galaxies together

4. Chromosomes are found in the

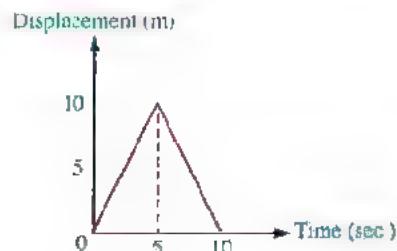
a. mitochondria. b. endoplasmic reticulum.
c. green plastids. d. nucleus.

B Write the scientific term for each of the following statements :

1. It is actual length of the path that a moving object takes from the starting point of the movement to the end point.
2. It is the image that cannot be received on a screen and it is always erect.
3. It is a point inside the lens that lies on the principal axis in the mid distance between its two faces.
4. A type of reproduction that takes place by only one parent, without producing gametes.

C Study the following figure, then complete :

Total distance = and the amount of
velocity after five seconds =



Question 2

A Put (✓) or (✗) in front of the following sentences:

1. To identify the force its necessary to know its magnitude and its direction. ()

2. When the object covers double the distance during the same time the speed will decrease to quarter. ()

3. The unicellular protozoans reproduce by binary fission. ()

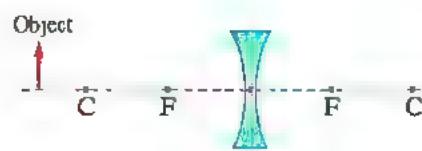
4. Ferdinand Holye assumed the nebular theory. ()

B Complete the following sentences :

- When the object covers equal distance at periods of time, so $\bar{V} \neq V$
- The reproduction causes the genetic variation among living organisms.
- is used to manufacture space observation telescopes.
- The final speed for a moving object by negative acceleration equals

C In the opposite figure :

Draw two light rays that determine the position of the formed image, and mention the properties of the formed image.





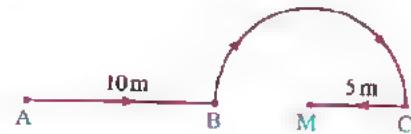
Question 3

A Correct the underlined words :

1. Compass helps us in identifying the speed of the car directly.
2. When the human body cell divides, the spindle fibers is formed from intensifying the cytoplasm at the prophase.
3. If an object is placed at a distance 40 cm from a convex lens its focal length is 20 cm, an image is formed at distance 10 cm.
4. The solar system is located in one of circular arms of the Milky Way galaxy.

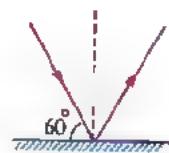
B Study the following figures and choose the correct answer :

1. An object is moving from point (A) to point (M) which represents the centre of the circle, passing by two points (B, C), the amount of its displacement = m.



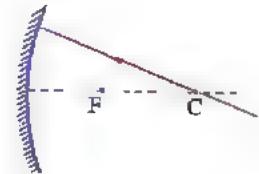
a. 5 b. 10
c. 15 d. 20

2. A light ray falls on a plane mirror as in figure, the angle of reflection =



a. 120° b. 90°
c. 60° d. 30°

3. In the opposite figure the incident light ray,



a. reflected parallel to principal axis.
b. reflected through the focus.
c. reflected in an angle of 40°.
d. reflected on itself.

4. In the opposite figure, this living organism reproduces asexually by



a. spore propagation.
b. regeneration.
c. budding.
d. vegetative reproduction.

C Comparison between mitosis and meiosis :

Points of comparison	Mitosis	Meiosis
Site of occurrence :
Number of the produced cells :

Part 3

Question 4

A Choose from column (B) what suits it in column (A) :

Column (A)	Column (B)
1. The crossing star theory	a. the point that in the middle of the reflecting surface of the mirror
2. Focus of concave mirror	b. it takes place between two inner chromatids of each tetrad.
3. Crossing over phenomenon	c. the result of dividing the covered total distance and the total time taken to that.
4. Average speed	d. it assumed that the origin of the solar system was a big star which is the Sun.
	e. it is the point of collection of rays reflected from the mirror after falling parallel to the principal axis.
	f. it takes place at the end of metaphase.

B Give one example for each of the following :

1. Vision defect which is due to increasing in the radius of the eyeball.
2. The motion in one direction.
3. Type of mirrors which forms an upright, equal and laterally reversed image of the body.
4. Gametes which are produced from the division of anther's reproductive cells of the flowering plants.

C If the relative speed of car equals 120 km/h, and a radar observes it which is found in another car moving at a speed of 50 km/h in the opposite direction, if the maximum speed on this road is 90 km/h.

Does the car exceed the maximum speed limit ? Explain your answer mathematically.

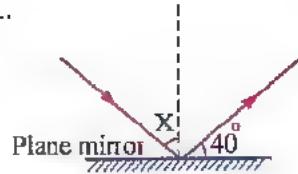
25 South Sinai Governorate

Answer the following questions :

Question 1

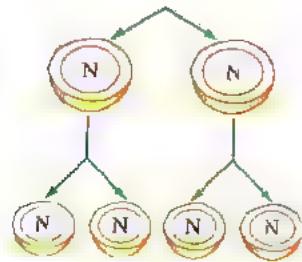
A Complete the following sentences :

1. The Sun and the surrounding planets revolve around the
2. In the following figure : angle of incidence (X) equal
3. The actual speed of a car whose relative speed is 70 km/h relative to an observer moving in the opposite direction at a speed 40 km/h equals km/h.





4. In the opposite figure,
the type of the division is



B Choose the correct answer :

1. The chromosome is chemically consists of
- a. nuclear acid DNA only. b. protein only.
- c. fats. d. protein and nuclear acid DNA.
2. A person holds a pen by its left hand in front of a plane mirror, so the image of the pen appears at side because it is
- a. left – inverted. b. right – inverted. c. left – upright. d. right – upright.
3. The ratio between the initial speed and the final speed for an object moves with deceleration
- a. greater than one b. less than one. c. equal one. d. equal zero.
4. An object was placed in front of concave mirror its focal lens equal 8 cm, the image is formed at a distance 20 cm from the mirror, so the distance between the object and the mirror equal
- a. 4 cm. b. 8 cm. c. 12 cm. d. 20 cm.

C The following figure represents an object moves with uniform speed. Choose from between two brackets :

(distance – speed – acceleration – time)

The (X) axis represents and (Y) axis represents



Question 2

A Put (✓) or (✗) :

1. The speed of the moving object increases by increasing the time required to cover a certain distance. ()
2. The solar system contains many of stars. ()
3. The parental individual disappears during binary fission ()
4. An object moves a distance 100 metre at north, then 30 metre at south, the difference between the covered distance and the displacement equal 60 metre. ()

B Write the scientific term for each of the following statements :

1. The movement in which the body covers equal distances in equal time during moving in straight line.

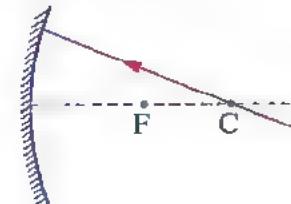
Part 3

2. A vision defect results due to the decrease in the convexity of eye lens surface.
3. A vector quantity its measuring unit metre / second (m/s) each one second.
4. The phase which follows the duplication of the genetic material during cell division.

C In the following figure :

How does the incident ray reflect ?

Write your explanation.



Question 3

A Correct the underlined words :

1. Contact lenses can stick directly to the eye retina.
2. A muscle cell contains (23) pairs of chromosomes, so the number of chromosomes in an ovary cell equal (88) chromosome.
3. When the universe was formed it contains hydrogen and helium gases in a ratio (1 : 3) at the beginning of the Big Bang.
4. A train moves at a speed 72 km/ hour, so the distance covered by the train in half a minute equal 500 metre.

B Cross odd the unsuitable word or sentence :

1. Mass – Length – Force – Time.
2. Magnified Image – Concave lens – Convex lens – Virtual.
3. Unicellular protozoans – Simple algae – Bacteria – Sponge.
4. Telescopes – Mirrors – Magnifying lenses – Microscopes.

C What happens when an amoeba cell divides three mitotic divisions ?

Question 4

A Choose from column (B) the suitable for column (A) :

(A)	(B)
1. Plant cells	a. established the modern theory.
2. Fred Hoyle	b. change in speed of moving object.
3. Pole of the mirror	c. established the nebular assumption.
4. Acceleration \times time	d. the spindle fibers are formed from the centrosome.
	e. a point in the middle of reflecting surface of a spherical mirror.
	f. the spindle fibers are formed from the cytoplasm.
	g. the displacement in one second.



B Choose the correct answer:

1. In the opposite figure, the object moves with highest speed.

- A
- B

2. The person with normal vision sees the near objects clearly at a distance not less than

- 25 cm.
- 8 metre.

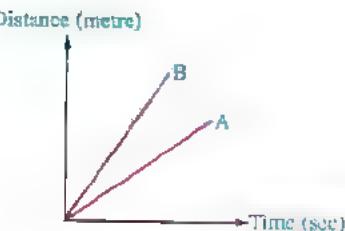
3. The centromere of each chromosome splits lengthwise into two halves during

- anaphase.
- anaphase I.

4. The focal length (F) of the spherical mirror equal of the radius of curvature (R).

- double
- half





C Calculate the average speed for a runner covered a distance of 175 metres in 15 seconds and then come back walking to the starting point in 55 seconds.

26 | New Valley Governorate

Answer the following questions :

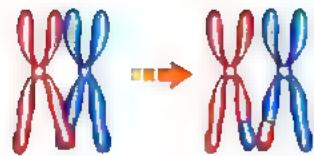
Question 1

A Choose the correct answer:

Part 3

B Look at the opposite figure then answer :

1. The name of this phenomenon is
2. The name of the phase in which it occurs is
3. The type of cell division is
4. In this phenomenon parts of the two inner chromatids of are exchanged.



C A train moves in a straight line and its speed is changed from 12 m/s to 24 m/s during 6 seconds, what is the value of its acceleration ?

Question 2

A Write the scientific term for the following statements :

1. A transparent optical piece that its medium refracts light and is limited with two spherical surfaces.
2. Quantities enough to identify it knowing its magnitude only.
3. The combination of a male gamete and a female gamete to form a zygote.
4. The covered distance in a fixed direction.

B According to the assumptions of the modern theory for the scientist Fred Hoyle about the origin of solar system, arrange the following events from the oldest to the latest.

1. A gaseous cloud remained and subjected to cooling and contraction forming planets
2. The attraction force of the Sun controlled the orbits of planets around it.
3. The star exploded and bombing of its nucleus away from the gravity of the Sun.
4. A star was rotating near the Sun.

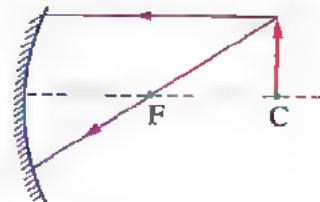
C Give the reason for :

Sexual reproduction is the source of the genetic variation.

Question 3

A Correct the underlined words :

1. The car speed can be determined directly by using compass.
2. Contact lenses stick directly to eye pupil and can be removed easily.
3. Vegetative reproduction in plant is considered from types of sexual reproduction.
4. The regular speed is the scalar speed but in a definite direction.



B In the opposite figure, answer the following questions :

1. Complete the paths of rays indicating the image of the object.
2. The properties of formed image are :
 - a)
 - b)
 - c)

C What happens when ...?

A moving object covered the same distance it moved and the time is doubled (according to its speed).

Question 4

A Complete the following statements :

1. Reproduction by sporogony occurs in
2. If the speed of a car is 72 km/h, this means that its speed equals m/sec.
3. mirror is placed on the corners of narrow roads to monitor the movement of cars.
4. when a body moves 60 metres northward then returns 40 metres southward, so its displacement is northward.

B Cross out the odd words :

1. Bacteria Amoeba – Yeast fungus – Euglena.
2. m/sec^2 m/sec. – m/minute – km/hour.
3. Plane mirror – Real image – Virtual image – Equal to the body.
4. Force – Displacement – Acceleration – Mass.

C Compare between short and long sightedness in the following table :

P.O.C	Short sightedness	Long sightedness
Definition

Answer the following questions :

Question 1

A Choose the correct answer :

1. The parent individual disappears when reproduction occurs in the
a. yeast fungi. b. hydra. c. bacteria. d. starfish.
2. If the relative speed of a moving car is 80 km/h relative to a static observer, so the actual speed of this car is
a. zero. b. 40 km/h. c. 80 km/h. d. 160 km/h.
3. The building units of universe are
a. stars. b. galaxies. c. planets. d. moons.
4. If an object of 5 cm length is put at a distance of 6 cm from convex mirror its focal length is 4 cm, so the length of the formed image is
a. 7 cm. b. 6 cm. c. 5 cm. d. 4 cm.

B Write the scientific term for the following statements :

1. They are thread like bodies represent the genetic material of the living organism.
2. It's a point inside the lens if an incident light ray falls passing through it, the light ray will pass as straight line.
3. It is the rate of change of displacement.
4. An optical piece which is used to treat vision defects and it sticks to eye cornea.

C An object moves at 90 km/h and its speed decreases by the rate 2m/s^2 . Find the car speed after 10 seconds from the beginning of movement.

Question 2

A Correct the underlined words :

1. The origin of the solar system was the Sun according to the **nebuluar** theory.
2. To identify displacement it is necessary to know its magnitude and **time**.
3. Number of resulting cells from meiotic division **equal** the number of resulting cells from mitotic division.
4. The result of multiplying the speed of the body by the time equals the **acceleration**.



B Mention one example of each of the following :

1. A produced cell form meiotic division.
2. An optical piece forms real and diminished image.
3. Motion in one direction.
4. Scalar physical quantity.

C Compare between :

According to	Long sightedness	Short sightedness
The position of the images concerning the retina :

Question 3

A Choose the odd sentence :

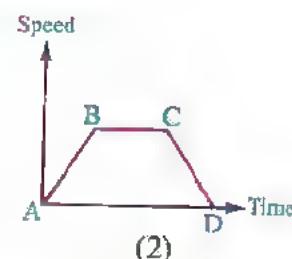
1. The observer state – Actual speed – The direction of observer's movement – Relative speed.
2. Reversed image - Upright image – Real image – Equal size image.
3. Sprial arm of Milky Way galaxy - The old stars – The recent stars – The Sun.
4. Produce ova – Compensation of the damaged cells – Produce new individuals identical to their parents – Growth of living organisms.

B Study the following figures then answer the questions below :



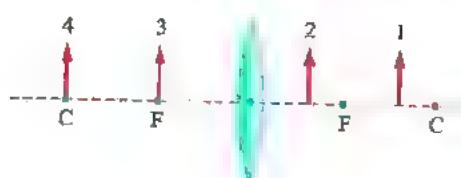
(1)

The angle of incidence is



(2)

At the period (BC) the acceleration equals



(3)

In which position the object must be placed to form a virtual erect enlarged image



(4)

The figure represents one of phases of meiotic division which is

Part 3

C Give a reason for :

Interphase occurs before cellular division.

Question 4

A Write the number which indicates each of the following :

1. The number of cells produced by a liver cell divides three successive divisions.
2. The number of stars in solar system.
3. The distance between the focus of the spherical mirror and its pole if the radius of curvature = 20 cm.
4. The displacement of a moving object whose end position is the same as starting position of his movement.

B Put (✓) in front of the correct sentences and (✗) in front of the false ones :

1. If a light ray falls passing through the center of the mirror curvature, it will reflect on itself. ()
2. The crossing over phenomenon occurs during anaphase I of meiotic division. ()
3. When a light ray falls perpendicularly on a reflecting surface, its angle of reflection equal 90° . ()
4. When an object moves at increasing acceleration, this means that its final speed is more than its initial speed. ()

C Describe the motion of the object if :

1. It covers equal distances at equal periods of time.
2. It doesn't change its position by passing time.

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1

Cairo Governorate

Answer the following questions :

Question 1

A Complete the following sentences :

1. The physical quantity that can be identified by its magnitude only is
2. The combination of male and female gametes produces
3. When the body is moving at uniform speed, the acceleration equals
4. and hydrogen are two gases which produced galaxies, stars and universe over millions of years.

B Cross out the odd words :

1. Time – Length – Force – Mass.
2. Prophase – Reduction – Metaphase – Anaphase
3. Real – Virtual – Erect – Magnified.
4. Amoeba – Euglena – Paramecium – Sponge.

C An object is placed at 4 cm from convex lens, its focal length is 3 cm.

Show by drawing the formed image and mention the properties of this image.

Question 2

A Mention one example of each of the following :

1. A living organism that reproduces by regeneration.
2. Type of mirror which forms an upright, equal and laterally inverted image of the body.
3. Gamete which is produced from the division of anther of the flowering plants.
4. Used instead of the medical glasses and can stick to eye cornea and removed easily.

B Choose from column (B) what suits it in column (A) :

Group (A)	Group (B)
1. Nucleic acid	a. change of object speed.
2. Acceleration \times time	b. established the Modern theory to explain the origin of the solar system.
3. Motion	c. carries genetic information of the living organism.
4. Fred Hoyle	d. the change of an object position as time passes according to the position of another object.

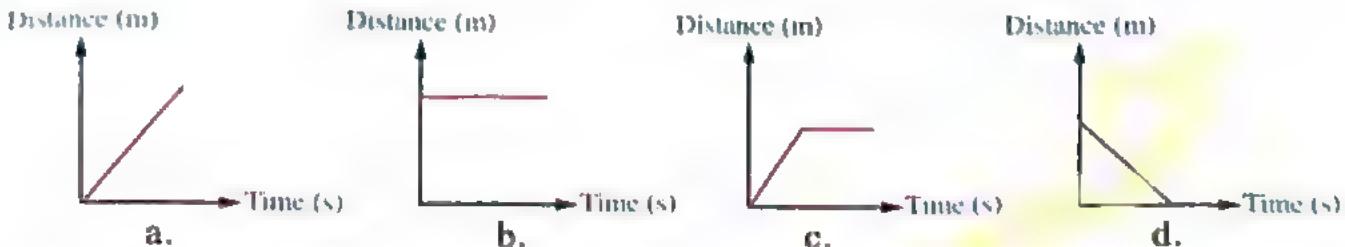
C Compare between : Relative speed and average speed (according to the definition).



Question 3

A Choose the correct answer :

1. Which of the following (distance – time) graphs describes the object at rest ?



2. A body of 10 cm length is placed at the centre of curvature of the **concave** mirror, so the image length equals cm.

a. 5 b. 7 c. 10 d. 20

3. The mitotic cell division produces two new separate cells each one has the same number of chromosomes of the mother cell

a. N. b. 2 N. c. 3 N. d. 4 N.

4. The ratio between final speed and initial speed of an object moves by positive acceleration equals

a. zero. b. one. c. less than one. d. more than one.

B Correct the underlined words :

1. The simplest type of motion is the motion in curved line.

2. A plane mirror is placed to the right and left side of the car driver.

3. Nucleolus and nuclear membrane disappear at the end of anaphase of the mitotic cell division.

4. The solar system is located in one of the circular arms of the Milky Way galaxy.

C Give a reason for :

The long-sightedness is corrected by using a convex lens.

Question 4

A Write the scientific term :

1. A moving object covers equal distances at unequal periods of time.
2. It is a point inside the lens that lies on the principal axis in the mid distance between its faces.
3. The covered distance at a certain direction.
4. A glowing gaseous sphere was revolving around itself, which assumed that it was the origin of the solar system.

3

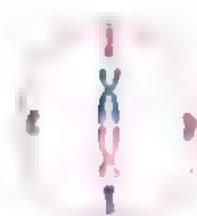
Ⓐ Study the following figures then answer:



1. The incident light ray reflects



2. The organelle is called



3. The figure represents the

4. The type of sexual reproduction

Ⓑ What is meant by ... ?

An object speed changes (increasing or decreasing) by equal values in through equal periods of time

2 Giza Governorate

Answer the following questions :

Question 1

A Choose the correct answer :

1. The opposite graph represents the movement of an object at
 - a. positive uniform acceleration.
 - b. negative uniform acceleration.
 - c. constant speed.
 - d. an irregular speed.
2. Mathematicians use _____ between different variables to describe a lot of physical phenomena.
 - a. examination
 - b. multi technology
 - c. laboratory experiments
 - d. mathematical relations





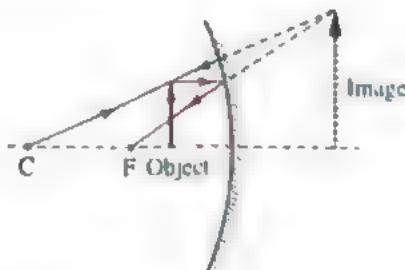
3. If a person stands in front of a plane mirror, the formed virtual image is always
 a. upright. b. inverted. c. real. d. diminished.

4. The line that joints between the two centres of curvature of the lens passing by the optical centre of the lens is known as
 a. the optical centre of the lens. b. the principal axis.
 c. the radius of curvature of the face of the lens. d. secondary axis.

B Study the following figures, then answer the questions below each :

Fig (1)

The figure (1) in front of you represents a case of the formation of images in a concave mirror,

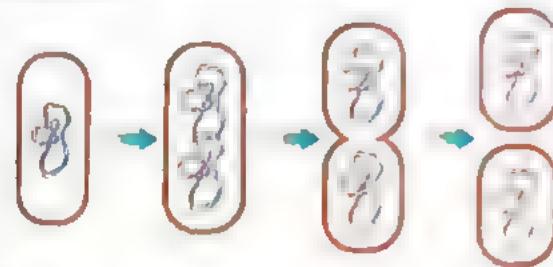


Answer :

1. Mention the position of the formed image.
2. Mention the properties of the formed image.

Fig (2)

The figure (2) in front of you represents a form of asexual reproduction in living organism.



Answer :

1. Mention the type of reproduction that is represented by the organism.
2. What is the name of this organism?

C A student leaves school and moves at a speed of 1.5 m/s
 Calculate the distance covered by the student after two minutes.

Question 2

A Complete the following sentences :

1. The relative speed of an object moving faster than the observer which moving in the same direction is equal to
2. Somatic cells divide by mitotic cell division, which leads to the growth of living organisms and compensate
3. Sexual reproduction is a source of genetic variation due to occurrence of . . phenomenon.
4. The physical quantity that its magnitude and direction are necessary for identifying it is called

B Correct the underlined words :

1. When an incident light rays falls on a plane mirror with an angle equals 40° , the angle between the incident ray and the reflected ray equals 30° .
2. In the universe, groups of stars are gathered to form planets.
3. When putting a body between the focus and the centre of curvature of concave mirror, the formed image is real, inverted and equal to the body.
4. The atomic particles merged together during Big Bang producing Helium and Nitrogen gases.

C What's meant by an object's displacement is 20 metres in west direction ?**Question 3****A** Write the scientific term of each of the following :

1. The ability of some animals to compensate their missing parts.
2. The actual length of the path that a moving object covers from the starting point to the ending point.
3. The part in the cell which is responsible for cellular division.
4. The product of the total distance that a moving object covers divided by the total time taken to cover this distance.

B Put (✓) or (✗) :

1. The graphical relation (distance – time) for uniform motion at a constant speed represented by a straight line parallel to the time axis. ()
2. If the number of chromosomes in pollen grain in a plant is (10) chromosomes, then the number of chromosomes in stem cells of the same plant is (10) chromosomes. ()
3. When the object position changes as time passes, the object is moved during this period. ()
4. The bud emerges as a lateral bulge in the cell, the cell nucleus divides meiotically into two nuclei, one of them remains in the parent cell and the other migrates to the bud. ()

C What are the results of the decreasing of the eyeball diameter ?**Question 4****A** Find out the different word that does not fit the following statements :

1. Mass of an object 100 kg – Its length 16 cm – It covers 50 m – By speed equals 120 m/s.
2. The sun – The Milky Way Galaxy – Eight planets – Ten planets.
3. The Big Bang theory – Nebular theory – The Crossing star theory – The Modern theory.
4. Kilometre/hour – Metre/second – Metre/minute – Metre/second².

B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Convex mirror	a. phase at which the genetic material is split.
2. Gametes	b. angle of incidence = angle of reflection
3. Interphase	c. used in car parking areas to be arranged in lines.
4. The first law of light reflection	d. it contains half the number of chromosomes of somatic cells.

C When an object is placed in front of a convex lens at a distance less than its focal length, and another object is placed in front of a concave lens, the formed image in both cases is virtual, mention one difference between the image formed by (convex lens - concave lens).

3 | Alex. Governorate

Answer the following questions :

Question 1

A Put (✓) or (✗) :

1. The contact lenses are used instead of glasses by putting it on the eye retina. ()
2. During meiotic division, gametes are produced by special cells known as somatic cells. ()
3. By putting a source of light in front of a convex lens, the reflected rays are converged ()
4. The universe emerged when atomic particles merged together producing helium and hydrogen gases. ()

B Copy the following figure, then :

1. Draw the light rays that form the image of an object.
2. Mention the properties of the formed image.



C What is meant by the displacement ?

Question 2

A Write the scientific term of each of the following :

1. The actual length of the path that a moving object covers from the starting point to the ending point.

2. The optical piece that is used to treat a vision defect that is caused by forming a real image in front of the retina.
3. The value of change in the object speed in one second.
4. Any straight line that passes by the centre of curvature of the mirror and does not touch its surface except the pole of the mirror.

(B) A plane moved from point (A) to point (B). It covered distance 720 km in one hour. Calculate its speed by m/sec. knowing that it moves with a regular motion.

(C) Give reasons for :

1. The continuous expansion of the universe.
2. Asexual reproduction in some plants doesn't need the presence of seeds.

Question



(A) Choose the correct answer :

1. From examples of the vector physical quantities are

a. mass and force.	b. radius and distance.
c. displacement and acceleration.	d. force and time.
2. The optical piece that forms an equal virtual image of the object is

a. convex mirror.	b. plane mirror.	c. concave lens.	d. convex lens.
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3. If the focal length of the concave mirror equal 5 cm, then its diameter equal

a. 5 cm.	b. 10 cm.	c. 15 cm.	d. 20 cm.
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4. If a cell of muscle in a female rabbit contains 22 pairs of chromosomes, then the number of chromosomes in its ovum equal

a. 11	b. 22	c. 44	d. 88
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(B) In the opposite graph :

1. If the line (C) represents a moving body by acceleration equal zero, then what do the horizontal axis (1) and the vertical axis (2) represent ?
2. Mention the type of asexual reproduction for each of the following :

(a) Bacteria.	(b) Mushroom fungus.
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(C) What is the importance of each of the following ... ?

1. The gaseous line in the Crossing Star theory.
2. The nucleic acid DNA in the cell chromosome.

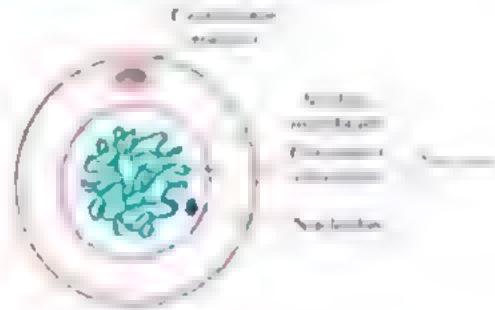
Question

A Correct the underlined words :

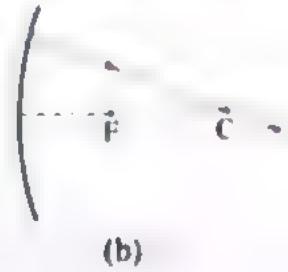
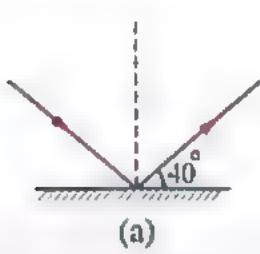
1. The relative speed of the moving object depends on the time
2. The focus is the point inside the lens and lies on its principal axis.
3. The modern theory depends on presence of clouds or nebula in space
4. The meiotic division occurs in the anther of the flowering plants to produce ova

B 1. Look at the following figure, then answer :

- (a) What is the name of the phase which is represented by that figure ?
- (b) When does this phase occur ?



2. Calculate the value of reflecting angle in both of the two figures :



Q What happens in the following cases ... ?

1. Absence of centrosome from the animal cell of living organism during cell division
2. No fusion between male gamete and female gamete in the sexual reproduction.

4 | Qalyoubia Governorate

Answer the following questions :

Question 1

A Correct the underlined words :

1. The measurement unit of the quantity resulting from dividing the displacement by the time of an object is m/s^2 .
2. The universe was formed from the merging of atomic particles, forming the oxygen and nitrogen gases that produced the universe.
3. An equal image for an object is formed at a distance of 14 cm by a concave mirror its diameter is 7 cm.
4. Asexual reproduction occurs by meiotic cell division.

B Put the following words (from between brackets) in the right space in the following statements :

(binary fission – short sightedness – zero – 32 metres – long sightedness – budding – enarct)

1. A person who sees things clearly at a distance more than (6 metres) suffers from
2. An object moved towards the east (16 metres) and then returned to the starting point, so its displacement is
3. A person with a darkness (opaque) of the eye lens suffers from disease.
4. Amoeba reproduces by

C Study the figures shown, then answer the following :

1. In figure (1), what is the name of the structure indicated by the letter (x) ?
2. In figure (2) what is the name of the phase that follows the phase that is shown in front of you ?

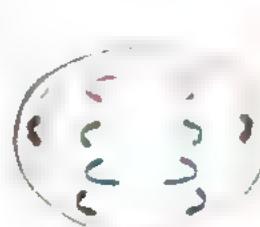


Figure (2)

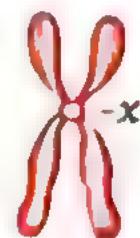


Figure (1)

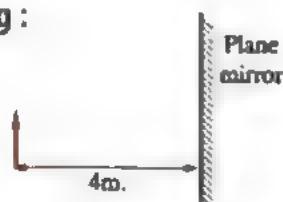
Question 2

A Write the scientific term for the following statements :

1. A physical quantity which can be fully defined by knowing its magnitude and its measuring unit.
2. A transparent medium that refracts light and is limited with two spherical surfaces, thin at the middle and thick at the tips.
3. The exchange of some parts of the two inner chromatids of each tetrad group.
4. It contains all galaxies, stars, planets, moons, and all living organisms.

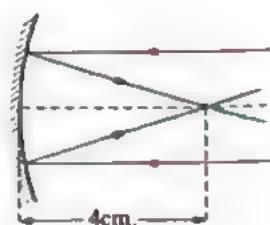
B Write the number which indicates (refers to) each of the following :

1. The distance between the position of the body and the position of its image in the figure shown in front of you when the mirror approaches towards the body a distance = 1 metre (one metre).
2. The number of produced cells from the mitosis (mitotic) division of a somatic cell once.
3. The number of gametes resulting from a meiosis division of a reproductive cell in the testes.
4. The speed of a body that covers a distance of 36 metres in 6 seconds.



C By using the data shown in the following figure :

1. Draw on your answer sheet the path of the rays for an object when it is placed at a distance of (11 cm) from this mirror to form the image.
2. Mention the properties of the formed image in this case ?

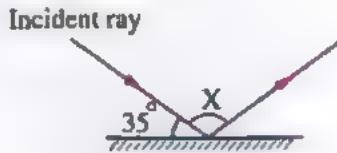




Question 3

A Choose the correct answer in each of the following :

1. In the opposite figure, a light ray falls on a plane mirror so the value of angle (x) is
 a. 35° b. 110°
 c. 55° d. 70°
2. A static car its speed became 32 m/s after 8 seconds, so the acceleration of motion = m/s^2 .
 a. 4 b. 0.25 c. 8 d. 24
3. The ratio between the velocity of a body moved with a speed of 72 km/h and the velocity of a body moved with a speed of 20 m/s is
 a. 3.62 b. 1 c. 0.28 d. 2
4. The theory which is based on the stars glowing for a short time then the disappearance of this glowing is
 a. the Modern theory. b. the Crossing Star theory.
 c. the Chamberlain and Moulton theory. d. the Nebular theory.

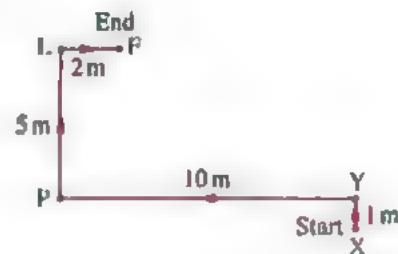


B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Contact lenses	a. is used to examine (detect) tiny objects.
2. The velocity of the wind	b. a method by which the bread mould fungus reproduces.
3. Nano-molecules of gold	c. are used instead of glasses to treat vision defects.
4. Spores (spore propagation)	d. calculating the amount of fuel to complete the flight and save fuel.
	e. a method of reproduction in yeast fungus.
	f. to detect the cancer cells.

C The opposite figure shows the path of movement for two persons from the same starting point to the end point. Find :

1. The time of motion of the first person to take the path from (X) to (F) passing through the points (Y, P & L) with a speed of 6 m/s .
2. The time of motion of the second person to take the path (X) to (F) directly with a speed of 4 m/s .



Question 4

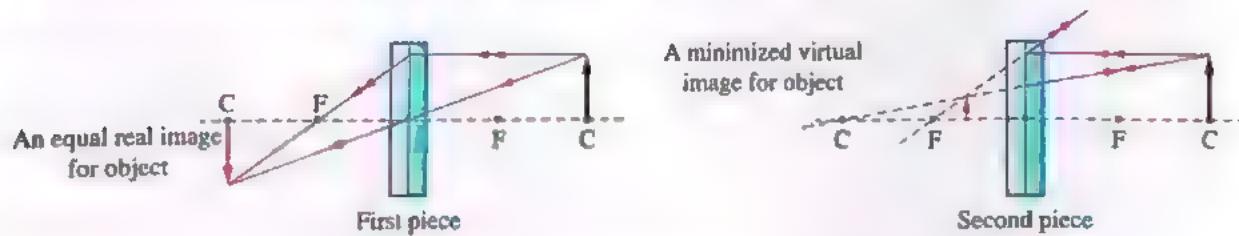
A Complete the following sentences :

1. A truck moves on along horizontal road at a uniform speed of 16 m/s for 4 sec., so the acceleration of motion during this period of time =
2. A theory that explains the origin of the universe due to a great explosion since 15000 millions years is
3. The result of multiplying the speed of the moving body by the time is
4. The speed of Moaz's car is 85 km/h, and he was observed at a relative speed of 135 km/h. by an observer, so the observer's speed is

B Cross out the odd word :

1. The work – The velocity – The force – The acceleration of motion.
2. Reproductive cells – Liver cells – Gametes cells – Skin cells.
3. The properties of image in the concave lens are : (Virtual – Magnified – Upright – Minimized).
4. m/s – km/h – m/min – m/s².

C Study the following cases, then mention the name of each optical piece :



5 El-Menofia Governorate

Answer the following questions :

Question 1

A Write the scientific term for each of the following :

1. The object whose position does not change by passing time.
2. It is the bouncing the incident light ray in the same medium when it strikes a reflecting surface.
3. The displacement covered in unit time (one second).
4. The lens that is used to treat human eyes that cannot see far objects clearly.

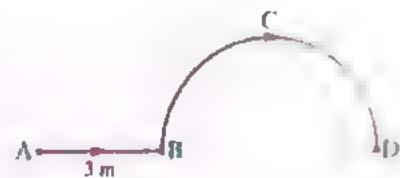
B When do the following cases occur ... ?

1. Length of the formed image of the body in front of convex lens is less than length of the object.
2. Disability of animal cell to form spindle fibers.
3. Angle of incidence of light ray on reflecting surface of concave mirror equal zero.
4. Formation of a colony by yeast fungus.

C The opposite figure describes the movement of an

object in straight line from point (A) to point (B) covering a distance (3 m), and then it moves in a circular path to point (D) passing through point (C), the magnitude of total displacement equals (17 m).

Calculate the distance (BCD). (consider $\pi = \frac{22}{7}$)

**Question 2****A** Compare between each of the following according to what is written between the two brackets :

1. Positive acceleration and negative acceleration. (according to their effect on final speed compared to the initial speed).
2. Reproductive cell and sexual cell (gamete). (according to the number of chromosomes relative to their number in somatic cell).

B Correct the underlined words :

1. The focal length of thick convex lens is equal to the focal length of the thin convex lens.
2. A lot of old stars gather in the spiral arms of Milky Way galaxy.
3. A light ray that falls, where it makes an angle of (20°) with the reflecting surface of a plane mirror, so the ray reflects by an angle (20°).
4. The building unit of the universe is the Sun.

**C** Two cars (A) and (B) move in the opposite direction from each other, if the relative speed of car (B) equals (100 km/h) relative to an observer in car (A) which moves by speed equals (20 m/s). Calculate the actual speed of car (B) in (km/h).

Question 3**A Choose the correct answer :**

1. In the opposite figure, the magnitude of object's speed in period (BC) equals the magnitude of its in period (AB).
 - a. speed
 - b. acceleration
 - c. distance
 - d. time
2. Euglena reproduces by
 - a. regeneration.
 - b. budding.
 - c. spore propagation.
 - d. binary fission.
3. When a moving object takes (2sec.) to make its final speed reaches (5 times) its initial speed, so its acceleration is its initial speed.
 - a. half
 - b. equal
 - c. double
 - d. two and half times
4. The formation of pollen grains in flowering plants by meiosis division occurs in
 - a. bud.
 - b. anther.
 - c. ovary.
 - d. carpels.

**B Put (✓) or (✗) in front of the following sentences :**

1. Asexual reproduction occurs in unicellular living organisms only. ()
2. When cheetah whose speed is (27 m/sec.) races with a car that has speed of (90 km/h), the cheetah precedes (overcomes) the car in this race. ()
3. Mitosis division is important for children and war-wounded. ()
4. When an object moves with regular speed, its average speed is more than its regular speed. ()

C An object was put in the mid-distance between plane mirror and optical centre of (converge) convex lens its focal length equal (6 cm) the image formed by plane mirror at distance equal (12 cm).**From the previous calculate :**

1. Distance between plane mirror and optical centre of lens equal cm. (**Complete**)
2. Length of formed image by plane mirror is (more than – less than – equal) length of formed image by convex lens. (**Choose the correct answer**)

Question 4**A Cross out the odd word :**

1. Acceleration – Force – Mass – Displacement.
2. Moulton – Crossing Star theory – Chamberlain – Nebula.
3. m/sec^2 – cm/sec – km/h – m/sec .
4. Nebular theory – Big Bang theory – Modern theory – Crossing star theory.



B Complete the following sentences :

1. Spherical mirror that used on corners of narrow roads to monitor the movement of cars is called
2. The phase in which some important vital processes occur to prepare the cell for division is called
3. The far object for the normal eye is present at metres.
4. Each thread of two connected threads which form chromosome is called

C After the world climatic changes conference was held in Sharm El-Sheikh, the owner of restaurant decided to depend on solar energy to cook food using a spherical mirror. If the suitable distance between the position of the cooking pot and the pole of the mirror to cook food in the least period of time is (3 m), determine each of the following :

1. The type of the used spherical mirror and the name of the position at which the cooking pot should be placed.
2. The diameter of the spherical surface required to make this mirror.

6 Dakahlia Governorate

Answer the following questions :

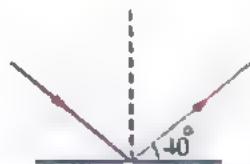
Question 1

A Complete the following sentences :

1. An object moves by regular speed when is equal to
2. A real image cannot be formed by a lens and mirrors and a plane mirror.
3. The bread mould fungus reproduces by, while the amoeba reproduces by
4. In flowering plants, meiosis division occurs in to form (as a male gamete).

B Answer the following questions :

1. A ray of light falls on a plane mirror and is reflected as in the figure, what is the angle of its incidence ?
2. What is the source of regeneration of a starfish arm ?
3. A machine works with a motor that has a certain power. So what are the factors needed to determine this force ?
4. What is the process that takes place before the cell enters the stages of division in both types ?



C An object moves in a straight line with uniform speed from point (A) to point (B) in a time of 4 seconds. Then it moves with uniform acceleration from (B) until it stops at (C) in 20 seconds. Calculate the acceleration with which it moved in period [B to C].



Question 2

A Correct the underlined words :

1. The plane mirror collects light rays.
2. When the human body cell divides, the spindle fibers arise from the condensation of the cytoplasm at the two poles of the cell.
3. The phenomenon of star exploding is due to sudden chemical reactions.
4. If an object moves 70 m north and then returns 40 m south, its displacement will be 110 m east.

B Cross out the odd word and write the scientific term of the others :

1. Mass – Time – Length – Displacement.
2. Ovary – Leaf – Root – Shoot.
3. Budding – Regeneration – Binary fission – Gametes – Spores.
4. m/sec. – m/min – km/h – m/s².

C An object was placed at a distance of (3 cm) from the optical centre of the lens, and upright, magnified image was formed.

1. What is the type of the lens ?
2. Show by drawing the path of the rays forming the image.

Question 3

A Choose the correct answer :

1. The solar system contains

a. eight stars and eight planets.	b. a planet and eight stars.
c. A star and eight planets.	d. one star and one planet.
2. The real speed of a car whose speed appears to be 50 km/h to an observer moving in opposite direction at a speed of 30 km/h is km/h.

a. 20	b. 30	c. 50	d. 80
-------	-------	-------	-------
3. A spherical mirror forms a real image its length (5 cm) for an object of length (15 cm), placed at a distance of 20 cm from it. So the probable focal length of this mirror is cm.

a. 8	b. 15	c. 25	d. 80
------	-------	-------	-------

4. At the end of the prophase of division

a. spindle fibers b. chromosomes

disperse

nucleolus

cell membrane

(B) Write the scientific term for each of the following

1. The rate of change of displacement

2. The straight line passing through the centre of curvature of a mirror and its pole

3. The process in which some parts of the inner homologous chromosomes exchange their exchanged.

4. The ability of the plant to reproduce without the help of seeds

(C) In the corresponding figure, a body moves in a circular path with a radius of (7 metres) and its circumference of (44 metres) from point (A) to point (B), to (C) to (D) within (8 sec). Calculate

1. Average speed.

2. Velocity.

Question 4

(A) Correct the following sentences :

1. Laplace assumed that under the effect of gravitational forces, the nebula lost its spherical shape and became a flat rotating disc.

2. The image of the object placed in front of a convex mirror is real, inverted and magnified

3. The chromosome is chemically composed of carbohydrates and fats and is found in the cytoplasm of the cell.

4. A concave lens is used to correct short-sightedness, as it works to bring the rays closer

(B) 1. Determine the location of each of the following :

(a) The solar system.

(b) The principal focus of the convex mirror.

2. Put (✓) or (✗) and correct the false :

(a) Vegetative reproduction is a source of genetic variation in plants. (✓)

(b) If a light ray passes through the optical centre of a convex lens, it passes parallel to the principal axis. (✓)

(C) What are the results bases on the following ... ?

1. Increasing the distance between the planets and the Sun.

2. Removing the nucleus from a living cell.

7) Sharkia Governorate

Answer the following questions :

Question 1

A Write what do the following expression mean :

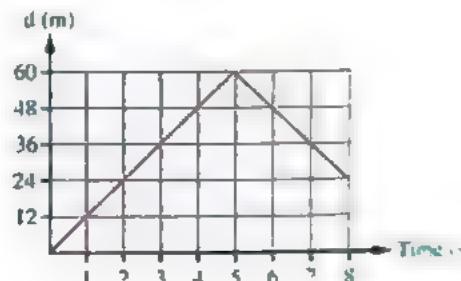
1. The change in the speed of a body in one second.
2. Seeing the far objects clearly but the near objects are not seen clearly.
3. Mathematical methods that physicists use to predict the relation between certain physical quantities.
4. An optical piece that is used to magnify the parts of watch when examining it.

B Choose the correct answer :

1. A concave mirror of focal length 20 cm. An object is placed at 50 cm in front of this mirror forming an image at a distance from the mirror.
 - a. more than 40 cm
 - b. more than 20 cm and less than 40 cm
 - c. equals to 20 cm
 - d. less than 20 cm
2. The parent individual disappears when reproduction occurs in the
 - a. yeast fungus.
 - b. bread mould.
 - c. amoeba.
 - d. starfish.
3. When the reflected light ray is perpendicular to the incident light ray, then the angle of incidence is equal to
 - a. 90°
 - b. zero
 - c. 60°
 - d. 45°
4. A set of reversible changes occur during mitosis division in
 - a. anaphase.
 - b. telophase.
 - c. prophase.
 - d. metaphase.

C The opposite graph represents the movement of an object in a straight line by a uniform speed and in two opposite directions. Calculate :

1. The distance which covered by the object.
2. The velocity of the object.



Question 2

A Complete the following sentences :

1. Velocity and displacement of a moving body have the same and differ in
2. Sexual reproduction in higher living organisms depends on two basic processes which are and

3. The car which moves by speed 80 km/h, its speed seems to be 40 km/h for an observer who moves by km/h in the direction of the car.

4. Male gametes in the human and animal world are called ... and in the plant world are called

B Correct the underlined words :

1. The position and the properties of the formed image by a concave mirror depend on the length of the object relative to the concave mirror.
2. The Sun was born after 12000 million years of the Big Bang, and then the Earth and planets were created.
3. The ratio between the length of the object to the length of the image formed by a concave lens is equal to the whole one.
4. Stars explosion phenomenon is due to the occurrence of sudden chemical reactions in the star.

C When the car driver pressed on the brakes, the car moved by an acceleration 5 m/s^2 , till the car stopped after 5 seconds.

Calculate its speed before pressing on the brake.

Question 3

A Cross out the odd word, then write what links the rest of the words :

1. Displacement – Acceleration – Mass – Force.
2. Sponge – Yeast fungus – Starfish – Hydra.
3. metre/second – metre/minute – kilometre/hour – kilometre.
4. Reproduction by part of the stem – Reproduction by part of the root – Reproduction by seeds – Reproduction by tissue culture.

B Choose from column (B) what suits it in column (A), then write the whole sentence :

(A)	(B)
1. Concave mirror	a. uses to treat the short-sightedness defect.
2. Second meiosis division	b. produces four cells each with ($2n$) chromosomes.
3. Concave lens	c. the dentist uses it during the examination.
4. Mitosis division	d. aims to increase the number of produced gametes.
	e. leads to the growth of living organisms.
	f. always forms real image.

C Compare by drawing only between : Image formation behind the reflecting surface of a concave mirror, for an object and image formation for an object by a convex lens, at the same side of the object.

Question 4**A Put (✓) or (✗) :**

1. Sometimes the ratio between the displacement and the distance for a moving body is more than the whole one. ()
2. In 1796 the scientist Laplace published a research entitled world order included his perception about the evolution of the solar system. ()
3. A person moved 40 metres to the north, then returned back 20 metres to the south, so his displacement is 20 metres to the south. ()
4. Hydrogen and helium gases produced the galaxies, stars and universe through millions of years. ()

B Choose the correct answer :

1. When an object with 6 cm length is put in front of a convex reflecting surface, and at a distance from it equals to its radius of curvature, then the length of the formed image is cm.
a. 4 b. 6 c. 8 d. 10
2. If the number of chromosomes in the somatic cell of a certain living organism is 44 chromosome, then its number in the reproductive cell for the same living organism is chromosome.
a. 22 b. 44 c. 66 d. 88
3. An object is placed in front of an optical piece, and its image is formed exactly at the position of the object, so the used optical piece is
a. concave mirror. b. plane mirror.
c. convex lens. d. concave lens.
4. The genetic material condenses and appears in the form of double strings of chromosomes in
a. prophase (I). b. metaphase (I). c. telophase (I). d. anaphase (I).

C Compare drawing only between metaphase in mitosis, and metaphase (I) in meiosis (I).**8 El-Gharbia Governorate**

Answer the following questions :

Question 1**A Choose the correct answer from the given choices :**

1. When the initial speed of an object equals zero. This means that the object
a. started its movement from rest. b. stopped moving.
c. moved at deceleration. d. moved in a circular path.

2. The optical piece that forms a reversed image that equal to the object is

a. convex lens. b. concave lens c. spherical mirror

3. In the opposite figure : An object moved in a circular path whose radius equals 14 metres from point (B) to the point (C), then to the point (D) passing through the point (A), so the displacement is equal to metre.

a. 7 b. 16
c. 28 d. 56

4. If a light ray incident on a plane mirror as in the opposite figure. It reflects where the angle of reflection equal

a. 30° b. 60° c. 90°

d. 120°

B Complete the following sentences :

1. Increasing the convexity of the eye lens surface leads to

2. In flowering plant anthers, meiotic division occurs to form

3. The change of an object speed in a unit time is measured in unit.

4. Hydra reproduces asexually by

C A car starts moving from rest till its speed reaches 25 m/s in 10 seconds. Calculate the acceleration with which the car moved.

Question 2

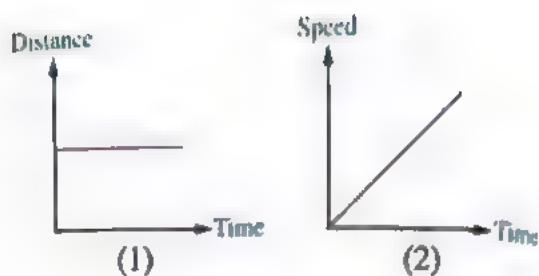
A Write the scientific term for the following statements :

1. The object whose position doesn't change as the time passes.
2. A type of reproduction that depends on only one parent.
3. The change of displacement relative to time.
4. Cells which are produced by meiosis and contain half the number of chromosomes in the mother cell.

B Correct the underlined words :

1. The universe emerged from merging the atomic particles forming oxygen and hydrogen gases.
2. The contact lenses can stick to the eye iris and can be removed easily.
3. The solar system lies at the centre of the Milky Way galaxy.
4. The light ray which is incident parallel to the principal axis of a concave mirror reflects passing by the center of the mirror curvature.

C Describe the motion of the body in each of the following graphs :

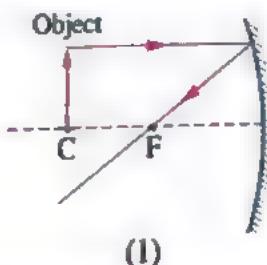


Question 3

A Choose from column (B) what suits it in column (A) then write the complete right statements in your answer sheet :

(A)	(B)
1. Displacement measuring unit	a. in which the centromere of each chromosome splits lengthwise into two halves.
2. Plant cells	b. time.
3. From scalar physical quantities	c. in which spindle fibers are formed from the centrosome.
4. Anaphase	d. m/s.
	e. in which spindle fibers are formed from condensing the cytoplasm.
	f. metre.
	g. the genetic material duplicates.
	h. mass and displacement.

B Study the following two figures then answer the questions below :



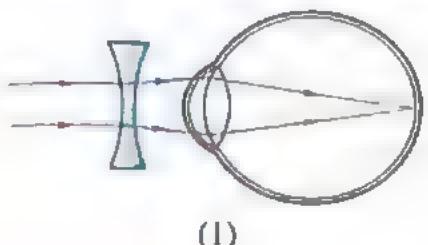
1. Complete the drawing to determine the image position.
2. Mention the image properties.



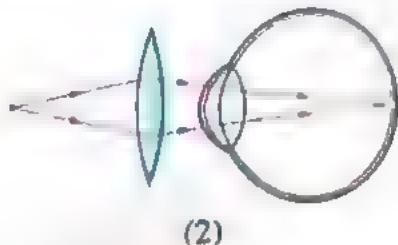
1. This organism reproduces asexually by
2. This type of reproduction depends on division.



C The following two figures represent the correction of vision defects :



(1)



(2)

First : Mention the vision defect in each case.

Second : Where the image formed before using the lens in each case.

Question 4

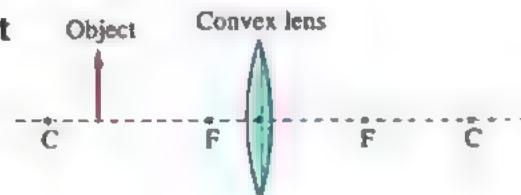
A Put (✓) in front of the right statement and (✗) in front of the wrong one :

1. It is said that the object that moves at a constant speed moves at uniform acceleration. ()
2. The scientist who established the Crossing Star theory is Fred Hoyle. ()
3. The speed of the car can be identified directly by using the compass. ()
4. According to the Crossing Star theory, planets of the solar system were originated from the explosion of a star was rotating near the Sun. ()

B Mention one example for each of the following :

1. Always forms a virtual, upright and diminished image.
2. Living organism that reproduces by forming spores.
3. A disease that infects the older person's eyes which needs a surgical intervention for its treatment.
4. Using Nanotechnology.

C A convex lens has a focal length of 4 cm. An object is placed at a distance of 6 cm from the lens.



Determine the position of the formed image and its properties by drawing two light rays only.

9

Damietta Governorate

Answer the following questions :

Question 1

A Choose the correct answer :

1. The object moves at constant uniform speed when
 - a. it moves at zero acceleration.
 - b. it moves at constant acceleration.
 - c. it covers equal distances at unequal times.
 - d. it moves with positive acceleration.

2. If the light ray falls passing through the focus of the concave mirror it will
 - a. reflect passing the focus.
 - b. reflect parallel to principal axis.
 - c. reflect on itself.
 - d. reflect through the centre of curvature.
3. If the number of chromosomes in the somatic cell ($2N$), then its number in the reproductive cell is
 - a. $\frac{1}{2}N$.
 - b. $4N$.
 - c. $2N$.
 - d. N .
4. The universe emerged from the particles of
 - a. oxygen – helium.
 - b. oxygen – hydrogen.
 - c. helium – hydrogen.
 - d. oxygen – nitrogen.

B Mention the number (value) that indicates each of the following :

1. A body of length 4 cm is placed at a distance equals double the focal length from a concave mirror, so the length of formed image becomes ... cm
2. Fertilized egg contains 12 chromosomes, so an unfertilized egg contains chromosomes
3. The radius of spherical mirror that its focal length equal 5 cm. = cm
4. The Sun was born after year of the Big Bang.

C What are the results of ...?

1. Galaxies move away from each other.
2. The speed of object increases by time.

Question **2**

A Write the scientific term of each of the following :

1. It is any straight line that passes by the centre of curvature of mirror and any point on its reflecting surface except the pole of the mirror.
2. It is formed in living organisms from cells known as reproductive cells through meiosis.
3. Special equipment used to study the Sun through its spectrum.
4. A tool used to identify the speed directly of the cars and airplanes.

B Compare between the following :

1. Sexual and asexual reproduction (according to importance, and type of division).
2. Real and virtual images (according to : definition, the mirror used to obtain both of them).

C Calculate the actual speed of the car, whose relative speed is 50 km/h relative to an observer moving in the opposite direction at a speed of 30 km/h.

Question **3**

A Problem :

A convex lens has its focal length equals 4 cm, An object is placed at a distance of 6 cm from the lens. Determine the position of the formed image and its properties and draw two light rays.

B Connect the underline words :

1. The crossing over phenomenon occurs in the anaphase of first meiosis.
2. The focal length of convex lens equals the distance between focus and pole of the mirror.
3. The Crossing Star theory is founded by scientist Fred Hoyle.
4. The long-sightedness is corrected by using a concave mirror.

C 1. Give a reason for :

Interphase comes before cell division.

2. The opposite table shows the results of an experiment in which an object moves

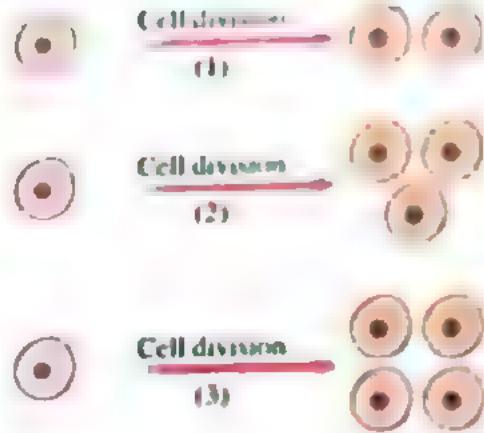
This object moves at (choose and mention the reason)

- Uniform deceleration.
- Uniform acceleration.
- Uniform speed.

Distance (m)	10	20	30
Time (sec.)	1	2	3

Question 4**A** Study the opposite figures, then answer :

1. Which figure has a scientific mistake ?
2. Mention the figure number that represents the division that :
 - Reduces the number of chromosomes to half.
 - Occurs during compensating of damaged cells.
 - Causes genetic variation between living organisms.

**B** What happen when ...?

1. Revolving speed of nebula around itself increased.
2. Focusing laser to Nano-molecules of gold present on the cancer cells.
3. The infection of the eyes with the cataract.
4. The object is put at the focus of concave mirror.

C A racer covered 50 metres northward within 30 seconds, then 100 metres eastward within 60 seconds, then 50 metres southward within 10 seconds, and then returns back to the starting point within 40 seconds. Calculate :

1. Total distance.
2. Displacement.
3. Average speed.
4. Velocity.



10 | Kafr El-Sheikh Governorate

Answer the following questions :

Question 1

A Choose the correct answer :

1. The distance covered through unit time is called
 a. acceleration. b. displacement. c. length. d. speed.
2. In the mitotic (mitosis) division, the centromere of each chromosome splits lengthwise into two halves during
 a. anaphase. b. prophase. c. metaphase. d. telophase.
3. The person who suffers from one of the vision defects, the doctor advised him to use glasses with concave lenses, this means that he suffers from
 a. decrease in the convexity of the eye lens.
 b. increases in the convexity of the eye lens.
 c. can't see the near objects clearly.
 d. decrease in the eyeball diameter.
4. The time needed by the Sun to complete one rotation around the centre of the galaxy is years.
 a. 202 b. 220 thousands c. 202 millions d. 220 millions

B Correct the underlined words :

1. Acceleration is the value of change of displacement of an object in one second.
2. Convex lens its focal length 20 cm, when we put an object at 40 cm from the lens, an image is formed at 20 cm from the lens.
3. Each galaxy has a distinctive shape according to harmony and order of the groups of planets in it.
4. Pollination is the process during which male gamete fuses with female gamete forming zygote.

C What are the properties of image that is formed when ...?

1. A child standing in front of a convex mirror.
2. A far object by using convex lens.

Question 2

A Complete the following :

1. The scientist who established the Nebular theory is
2. The mass is a physical quantity.

3. The convex mirror, its reflecting surface is a part of the surface of hollow sphere.

4. In flowering plants, a cell division occurs in the anther to produce

B Compare between :

1. The real image of the lens and the real image of the mirror.
(According to : the position of forming the image relative to the object)
2. The motion at constant speed and the accelerating motion.
(According to : drawing the graphical relationship (speed – time) for both of them)

C Calculate the actual speed in the following cases, if you know that the relative speed = 80 km/h when the car passes by :

1. An observer is at rest.
2. An observer moves in the same direction of the car with speed 30 km/h.

Question 3**A Put (✓) in front of true statements and (✗) in front of false ones :**

1. A train covers 200 km during 100 minutes, so its speed = 2 km/h. ()
2. Algae can reproduce by regeneration. ()
3. The stars explosion phenomenon is resulted from sudden nuclear reaction. ()
4. The long-sightedness is corrected by using a convex mirror. ()

B An ovum of an animal contains 16 chromosomes, determine each of the following :

1. Number of chromosomes in the liver cell in this animal.
2. Number of chromosomes in the sperm in this animal.

C What is meant by an object moves with an acceleration = - 2 m/sec².?**D Problem :**

An object was put in front of a plane mirror at distance 5 meters, if the mirror is moved a distance, so that the distance between the object and its new image = 4 metres. Calculate the distance that moved by the mirror toward the object.

Question 4**A Write the scientific term of each of the following :**

1. Special organs for reproduction in algae and fungi produce spores.
2. The process of exchange of genes between the two inner chromatids of the tetrad and distributing them randomly in the gametes.
3. The distance between the focus of the concave mirror and its pole.

4. The glowing gaseous sphere revolving around itself, from which the solar system was originated.

B Give reasons for :

1. The mitosis (mitotic) division plays an important role in the living organisms life.
2. The moving car with a certain speed seems to be at rest to the moving observer with the same speed and same direction.
3. The image formed by convex mirror is always virtual.
4. The sexual reproduction produces different individuals.

C Calculate the average speed if you know that the runner covered a distance of 300 metres in 30 seconds, then he returned back walking to start point in 170 seconds.

11 El-Behira Governorate

Answer the following questions :

Question 1

A Complete the following statements :

1. The covered distance in a certain direction is , while is the rate of change of distance.
2. Hydra reproduces by , but amoeba reproduces by
3. When the speed of an object increases regularly by passing time, so the object moves by acceleration, but when it moves by uniform speed its acceleration is
4. is used to correct the long-sightedness, but is used to correct the short-sightedness.

B Write the scientific term for each of the following :

1. Special organs for reproduction are existed in some algae and a lot of fungi.
2. It is the wide space that contains all galaxies, stars, planets, and living organisms.
3. It is the speed of a moving object relative to a static or a moving observer.
4. It is a straight line that passes by the centre of curvature of the mirror and any point on its reflecting surface except the pole of the mirror.

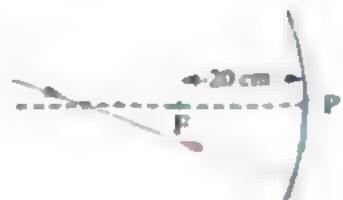
C "An Ovum of a female animal contains 8 chromosomes" find :

1. Number of chromosomes in a testis cell of this male animal.
2. Number of chromosomes in a sperm which produced from this male animal.

Question 2

A Choose the correct answer :

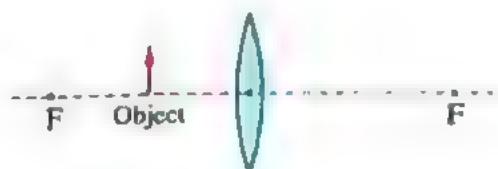
1. The scientists Chamberlain and Moulton established the
 - a. Modern theory.
 - b. Crossing Star theory.
 - c. Nebular theory.
 - d. Big Bang theory.
2. A light ray falls perpendicular on a plane mirror, so the angle of reflection equals
 - a. 30°
 - b. 90°
 - c. zero
 - d. 180°
3. A car moves at speed equals 72 km/h, this means that its speed equals m/s.
 - a. 40
 - b. 80
 - c. 60
 - d. 20
4. From the opposite figure, the radius of mirror curvature equals cm.
 - a. 5
 - b. 10
 - c. 40
 - d. 20



B Correct the underlined words :

1. Object speed can be determined directly by using compass.
2. Pollination is the combination of the female gamete and the male gamete to form a zygote.
3. Velocity is the total distance covered by the moving object divided by the total time.
4. A sudden violent chemical reactions occur within the star which led to its explosions.

C The opposite figure represents an object in front of a convex lens. Redraw the figure in your answer sheet and draw the direction of the rays which form the image of this object then mention the properties of the formed image.



Question 3

A Put (✓) or (✗) in the front of the following statements :

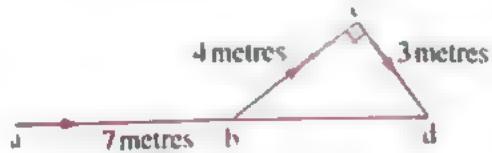
1. When a light ray falls on a concave lens parallel to the principal axis then the emergent light ray passes through the optical centre. ()
2. The chromosome consists of two chromatids that are connected at nucleolus. ()
3. Time is considered as an example for scalar physical quantities. ()
4. Sun and planets rotate around it are called Milky Way galaxy. ()

B Choose from columns (B) and (C), what suit them in column (A) :

N	(A)	(B)		(C)	
1	In cars (on the right and left sides of the driver)	a	Metaphase	f	precedes metaphase.
2	The centromere of each chromosome splits lengthwise into two halves.	b	Convex mirror	g	follows prophase.
3	Used in solar ovens.	c	Anaphase	h	diverging.
4	Chromosomes are arranged at the cell equator.	d	Concave mirror	i	converging.
		e	Telophase	j	precedes telophase.

C The opposite figure represents the motion of an object from point (a) to (d) passing by (b and c). Calculate :

1. Covered distance.
2. Displacement.



Question 4

A First : The following graphs represent the state of different bodies, so which of them represents :

1. A static car.
2. A car driver used the brakes till the car stopped.



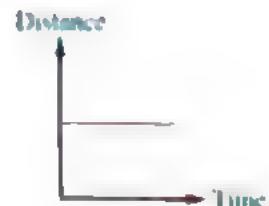
(a)



(b)



(c)



(d)

Second : An object is placed at 30 cm from a plane mirror, so the distance between the image and mirror equals cm, and when the object is approached by 20 cm towards the mirror, so the distance between the image and the object equals cm.

B Complete the following statements using the words between brackets

(meiosis division - protein - small - mitosis division - large - plastic - glass - fat)

1. The chromosome consists chemically from (DNA) and
2. The contact lens is a very thin lens made of
3. its purpose is increasing number of produced cells
4. Two moving objects (A) and (B) covered the same distance, if speed of (A) is greater than (B), so the time taken by object (B) is ..

C The following table represents a change of speed of a moving object by passing time

Speed (m/s)	zero	3	6	9	12
Time (s)	zero	1	2	3	4

- (a) Draw the graphical relation between speed on (Y) axis and time on (X) axis
- (b) Calculate the acceleration of this moving object.

12 Ismailia Governorate

Answer the following questions :

Question 1**A** Complete the following statements :

1. When an object covers equal distances at equal periods of time, so it moves at speed.
2. The vision defect which leads to the formation of image behind the eye retina is
3. Two cars move in the opposite direction with speed 100 km/h for each, so the speed of the second car as estimate by the driver of the first car =
4. If the angle between the incident light ray and the reflected light ray is 120° , so the angle of incidence equals

B Correct the underlined words :

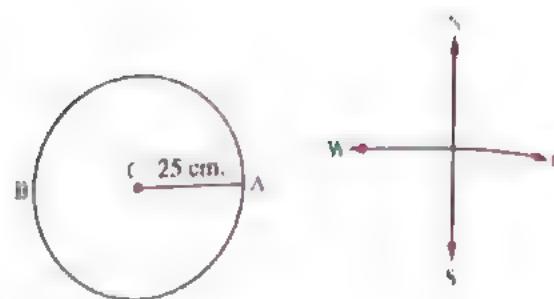
1. Spores are formed in bread mould fungus inside special organs, which are called ovary.
2. Contact lenses can stick to the eye retina to correct the vision defects.
3. Pollination is the combination of the female gamete and male gamete to form a zygote
4. The lens is a transparent medium that reflects the light and it is limited with two spherical surfaces.

C The opposite figure represents :

The movement of an object from point (A) on circumference of a circle its radius 25 cm. Calculate the displacement of an object when it moves :

First : Half cycle until it reaches to point (B).

Second : Complete cycle until it returns back to point (A).



Question 2

A Put (✓) or (✗) in the front of the following statements :

1. Displacement and velocity of an object are similar in direction and different in measuring unit. ()
2. Mitotic cell division produces two cells each one contains half number of chromosomes of parent cell. ()
3. The speed of the car can be identified directly by using the speedometer. ()
4. The offspring resulted from sexual reproduction keeps the genetic structure of the living organisms. ()

B Cross out the odd word or sentence :

1. Short-sightedness / Decrease eyeball diameter / Increase eyeball diameter / Shorter focal length of the eye lens.
2. Galaxies / The Sun / Planets / Moons.
3. It is used in solar ovens / It is used in telescope / It is used in front lights car / It is put at the left and the right sides of the drivers.
4. The nebular theory / The crossing star theory / The big bang theory / The modern theory.

C A car moves from rest and its speed reaches 25 m/sec. within 10 seconds.

Calculate the acceleration at which the car moves.

Question 3

A Write the scientific term for each of the following :

1. The ability of some animals to compensate their missing parts.
2. The speed of a moving object relative to a static or moving observer.
3. A dangerous disease occurs when some of the body cells are divided continuously without controlling.
4. The change of an object position as time passes according to the position of another fixed object.

B Choose the correct answer :

1. If the number of chromosomes in a liver cell of a certain living organism is 12 chromosomes, then the number of chromosomes of the male gamete equals to chromosomes.

a. 64 b. 46 c. 32 d. 16

2. A swimmer covers the swimming pool which its length = 90 m and return back the same distance in one minute, so his average speed is

a. 10 m/sec. b. 5 m/sec. c. 3 m/sec. d. 2 m/sec.

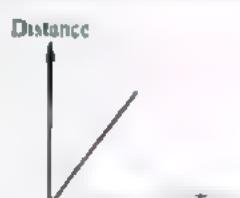
3. The vegetative reproduction occurs in plants without the need to

a. leaves. b. seeds. c. roots. d. stems.

4. The graph represents an object at rest.



a.



b.



c.



d.

C Give a reason for the object that is placed at the focus of a convex lens doesn't form an image.**Question 4****A Compare between :**

- Accelerating motion and decelerating motion. (according to relationship between the final speed and initial speed).
- Universe and galaxy. (according to the definition).
- Nebular theory and the crossing star theory. (according to the name of scientist).
- Time and force. (according to the kind of physical quantity).

B Study the following figures, then answer :

Fig. (1)	Fig. (2)	Fig. (3)	Fig. (4)
 Yeast fungus reproduces asexually by	 The reflected ray take the path number	 The part (2) splits lengthwise in	 The type of the principal focus for this lens is

PART
3

C An object is placed in front of concave mirror as in the opposite figure.

Redraw the figure in your answer sheet, then :

- Complete the path of incident and reflected rays to form the image.
- Mention the properties of the formed image.

13 Suez Governorate

Answer the following questions :

Question 1

A Complete the following statements :

1. The velocity is in one second.
2. The object moves at acceleration equals zero, when its speed is .. .
3. The lens is a transparent medium that the light.
4. The short-sighted person is treated by using lens.

B Put (✓) or (✗) in the front of the following statements :

1. The focus is a point inside the lens that lies on the principal axis. ()
2. The real image can be received on a screen. ()
3. The genetic material in the cell duplicates in prophase. ()
4. Sexual reproduction maintains the genetic structure of the living organisms. ()

C A boy on a bike covers 300 metres in a minute and 420 metres in the next minute.

Calculate the average speed.

Question 2

A Write the scientific term for each of the following :

1. The speed of a moving object relative to a static observer.
2. The change of an object position as time passes according to a fixed position.
3. Cellular division that produces gametes.
4. The ability of some animals to compensate their missing parts.

(B) Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Concave mirror	a. a wide space that contains galaxies.
2. The universe	b. the dentist uses it during the checking up
3. Convex mirror	c. contains the Sun and solar system.
4. Milky Way	d. the image of object placed in front of it is always smaller than the object.
	e. the image of object placed in front of it is always equal to the object.

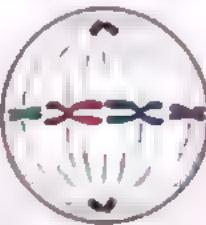
(C) Give a reason for mass is a scalar physical quantity.

Question 3

(A) Correct the underlined words in the following statements :

1. The compass helps in identifying the speed of the car directly.
2. The acceleration is the value of speed of an object in one second.
3. Yeast fungus reproduces asexually by spores.
4. In the meiosis division, each produced cell contains the same number of chromosomes of the parent cell.

(B) Study the two figures (1) and (2), then answer the questions in front of each figure :

First figure	Second figure
<p>1. The opposite figure represents one of the phases of the cell division : Complete :</p> <ol style="list-style-type: none"> a. The name of this phase is b. This phase belongs to division. 	<p>2. A light ray falls on a plane mirror as in the opposite figure : Complete :</p> <ol style="list-style-type: none"> a. The angle of reflection equals b. From the image properties formed by plane mirror is 

(C) A body is placed at a distance of 4 cm from a convex lens, its focal length is 3 cm. Draw a diagram to show the path of the rays falling on the lens and the refracted ones from it.

Question 3**A Choose the correct answer :**

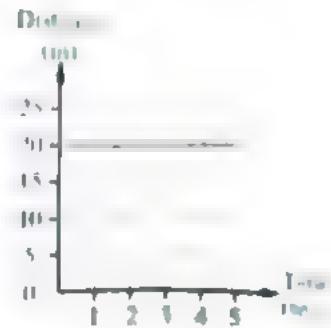
1. The measuring unit of acceleration is
 - a. metre.
 - b. m/sec.
 - c. m/sec^2 .
 - d. kilometre

2. _____ established the Crossing Star theory.
 - a. Chamberlain and Moulton
 - b. Laplace
 - c. Fred Hoyle
 - d. Newton

3. The two gases which produced galaxies, stars and universe over millions of years are helium and
 - a. carbon dioxide.
 - b. oxygen.
 - c. hydrogen.
 - d. nitrogen.

4. From the opposite graph, the speed of the object equals _____

The graph shows a straight line starting from the origin (0,0) and extending linearly. The vertical axis is labeled 'Distance cm' with major tick marks at 0, 10, 20, 30, 40, and 50. The horizontal axis is labeled 'Time sec' with major tick marks at 0, 1, 2, 3, 4, and 5. The line passes through the points (1, 20), (2, 40), (3, 60), and (4, 80).

**B Write the number which refers to :**

1. The length of image which is formed to an object its length 5 cm at a distance of 4 cm from a convex lens, its focal length is 2 cm.
2. The number of cells produced by an amoeba cell divides three successive mitotic divisions.
3. The number of chromosomes in a fertilized ovum of an animal if the number of chromosomes in a sperm is 20 chromosomes.
4. The focal length of a concave mirror if the distance between its focus and pole is 2 cm.

C Mention the properties of the formed image of an object placed in front of a concave lens.**14 Port Said Governorate****Answer the following questions :****Choose the correct answer :**

1. The phase of mitotic cell division in which spindle fibers are formed is the ...
 - a. prophase.
 - b. metaphase.
 - c. anaphase.
 - d. telophase.

2. If $\bar{V} \neq V$, so the body is moving with a speed.
 - a. uniform
 - b. non-uniform
 - c. increasing
 - d. decreasing

3. Mitotic cell division (meiosis) takes place in the cells of the
 a. liver b. skin. c. lungs d. bone

4. The type of reproduction which is a source of genetic variation is the
 a. budding b. vegetative c. sexual d. asexual

5. Some cells in the human body are not able to divide at all. These cells are
 a. bone b. liver c. nerve d. skin

6. Pilots take in consideration
 to calculate the answer to the following question
 a. the velocity of the wind b. the average speed of the wind
 c. the regular speed of the wind d. the relative speed of the wind

7. When an object moves with a zero acceleration this means that
 a. its speed is changing. b. its acceleration is increasing.
 c. its acceleration is decreasing. d. its speed is regular.

8. The scientist who suggested the Modern theory of the solar system is
 a. Laplace. b. Fred Hoyle c. Moulton d. Chamberlain

9. The parental individual disappears in case of reproduction by
 a. sporogony. b. regeneration. c. binary fission d. budding

10. Within minutes of the Big Bang, the ratio of hydrogen in the universe was
 a. 100% b. 75% c. 50% d. 25%

11. When an object 4 cm high is placed at a distance of 8 cm from a convex mirror, the height of the image formed by the mirror will be
 a. 16 cm. b. 8 cm. c. 4 cm. d. less than 4 cm

12. Which of the four positions (1 to 4) in the opposite figure is the correct position of an object to form a virtual magnified image in the same direction (side) of the object ..

a. 1 b. 2 c. 3 d. 4

13. Which of the following graphs represents a non-moving object ?

a.

b.

c.

d.

14. If the focal length of a concave mirror is 10 cm, so the distance of the object from the mirror to get a virtual image for the object could be
 a. 5 cm. b. 10 cm. c. 15 cm. d. 20 cm

15. If the value of the speed is $v = \frac{d_1 + d_2 + d_3}{t_1 + t_2 + t_3}$, the resulting speed will be an ~~fast~~ speed
 a. average b. increasing c. zero d. decreasing

16. According to the Nebular assumption, the nebula lost its heat gradually over the ~~time~~ so its
 a. revolving speed decreased and its size increased.
 b. size contracted and its revolving speed increased.
 c. shape changed into a sphere only.
 d. shape changed into a sphere and its revolution speed increases.

17. One of the causes of short-sightedness is that
 a. the eye lens is less convex only.
 b. the eye lens is more convex only.
 c. the eye lens is more convex and elongation of the radius of the eyeball.
 d. the eye lens is less convex and shortness of the radius of the eyeball.

18. The time taken by the Sun to complete one rotation around the centre of the Milky Way galaxy is about years.
 a. 120 million b. 220 million c. 260 million d. 260 thousand

19. Starfish reproduces asexually by
 a. budding. b. binary fission. c. sporogony. d. regeneration.

20. Which of the following are vector physical quantities ?
 a. Mass and force. b. Displacement and acceleration.
 c. Radius and area. d. Force and time.

21. Some plants can reproduce vegetatively (asexually) without need for
 a. seeds. b. stems. c. leaves. d. roots.

22. The ratio of the number of chromosomes in the cells resulting from meiotic (reduction division to the number of chromosomes found in the somatic cells of the living organisms is the
 a. quarter. b. double. c. third. d. half.

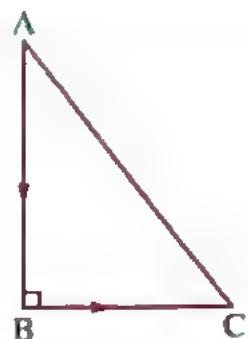
23. To define the length, mass and time, which of the following should be identified ?
 a. The magnitude and the direction.
 b. The magnitude and the measurement unit.
 c. The direction and the measurement unit.
 d. The magnitude, the direction and the measurement unit.

24. The straight between the centre of curvature of the lens and its optical centre is called the
 a. focal length. b. secondary axis. c. principal axis. d. radius of curvature



25. In the opposite figure : An object started its movement from (A) southward to (B) and covered a distance of 40 metres and then moved eastward to (C) which is 30 metres from (B), so the value of displacement for this object equals the length of

- a. AB
- b. BC
- c. AC
- d. AB + BC



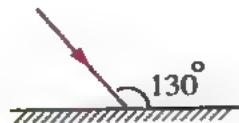
26. The actual length of the path that a moving object takes from the starting point of movement to the ending point is known as the

- a. displacement.
- b. acceleration.
- c. speed.
- d. distance.

27. If a train moves with a speed of 100 km/hour, it will cover a distance of 40 km in a time of hour.

- a. 0.3
- b. 0.4
- c. 0.5
- d. 0.6

28. In the opposite figure, if the angle between the incident light ray and the mirror surface is 130° , the angle of reflection will be



- a. 40°
- b. 50°
- c. 90°
- d. 120°

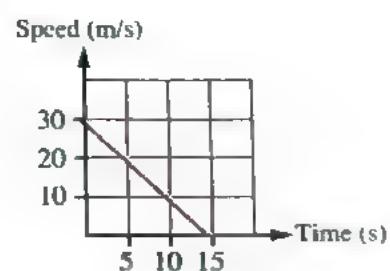
29. Give a reason : No image is formed for an object that is placed at the focus of a convex lens.

30. A car moved with a speed of 80 m/sec. and when the driver used the brakes, the speed of the car decreased by a rate of 2 m/sec. each second. Find its speed after 12 sec. of using the brakes.

31. Mention the importance of the centrosome in animal cell.

32. State the importance of the convex lens in the medical field.

33. The opposite figure shows the relation between the speed of an object and time. It can be concluded that the object is moving with an acceleration its value is and its type is



34. Compare between the sexual and asexual reproduction in terms of the genetic traits of the produced individuals.

15 Fayoum Governorate

Answer the following questions :

Question 1

A Complete the following sentences :

1. The vision defect which results from increasing in the convexity of the eye lens's surface is called , and it is treated by using lens.
2. A person climbed a wall with a height of 5 metres, then he returned to the ground again, so the distance which is covered equals and the displacement equals
3. The point that is in the middle of the reflecting surface of the spherical mirror is called , while the point inside the lens placed on the principal axis in the mid distance between its faces is called
4. The amount of change in speed at a unit time is , while the amount of the change of displacement at a unit time is

B Correct the underlined words in the following statements :

1. The spindle fibres in the plant cell are formed during cell division from the centromere.
2. The cell is prepared to enter the phases of mitosis division and the genetic material duplicates in prophase.
3. If the angle between reflected ray and reflecting surface is 140° so the angle of incidence equals 40° .
4. If the distance between a person and his image in the plane mirror equals 4 m so the distance between the person and the mirror equals 6 m.

C The opposite table represents the relationship between speed and time for a moving object.

Speed (m/s)	5	10	20	30	35
Time (sec.)	1	2	4	6	7

Represent graphically the relation between the speed and time, then calculate the acceleration by which the body moves.

Question 2

A Write the scientific term for each of the following statements :

1. The change of an object's location as time passes according to the location of another object.

2. The process at which some parts of the two inner chromatids of each tetrad are exchanged.

3. A phase at which chromosomes pairs are arranged at the cell equator.

4. The speed at which the moving object covers equal distances at equal periods of time.

B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. The Crossing Star theory	a. used at cars' parking.
2. Concave mirror	b. solar system was originated from a glowing gaseous sphere.
3. Convex mirror	c. solar system was originated from the Sun.
4. Nebular assumption	d. solar system was originated from another star instead of the Sun.
	e. used in the front light bulbs in cars.

C An object moves with a speed 100 m/s and decreasing acceleration equals 5 m/s^2 . Find its speed after 4 sec.

Question 3

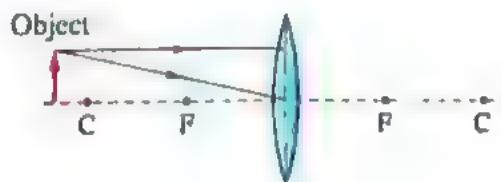
A Put the suitable word of these words (double or half or equal to) in the following spaces :

- The relative speed for a moving car relative to an observer standing on the ground is real speed.
- Number of chromosomes in an ovary cell is number of chromosomes in ovum cell.
- The speed of train moves at 90 km/h is the speed of car moves at 50 m/s.
- Number of cells produced from division of somatic cell is number of cells produced from division of reproductive cell.

B Exclude the unsuitable word or sentence and mention what the rest has in common :

- Zygote – Ovum – Sperm – Pollen grain.
- Simple algae – Bacteria – Paramecium – Sponge.
- Total distance – Time – Relative speed – Average speed.
- Mass – Force – Distance – Length.

C Complete the drawing in your sheet and write the characteristics of image :



Question 3

A Complete the following sentences with suitable words :

1. The difference between velocity and displacement is in ..
2. are formed in the plant cell from condensation of cytoplasm.
3. The relative speed of a moving car relative to an observer at rest its actual speed.
4. In mitosis division, the changes that occur in phase are called reversible changes.

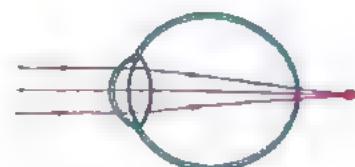
B Study the following figures, then answer :

1. The incident ray pass as straight line in this figure (true or false).
2. Mention the main important changes that takes place in the phase that precedes this phase.
3. In this organism the asexual reproduction by (spore propagation – regeneration – binary fission – budding) choose the correct answer.
4. In which position the object (↑) must placed to form a virtual erect enlarged image, knowing that point (2) represents a real focus and point (4) represents centre of curvature of a concave mirror.



C The opposite figure represents one of vision defects :

1. Mention the name of this vision defect.
2. How this vision defect treated ?



Question 4

A Put sign (✓) in front of correct answer or sign (✗) in front of wrong one :

1. Mass is a scalar physical quantity. ()
2. The recent stars are located in spiral arms of our galaxy. ()
3. When an object moves with constant speed, so it moves with positive acceleration. ()
4. After years of the Big Bang, particles of hydrogen and helium merged together. ()

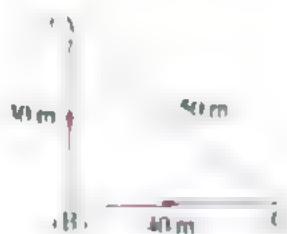


B Put a word (double or half or equal to) in its suitable place :

1. Radius of curvature is double focal length of the spherical mirror.
2. The distance between object and mirror is equal to distance between image and mirror.
3. Number of resulting cells from mitotic division is double number of resulting cells from meiotic division.
4. Number of chromosomes in gametes is half number of chromosomes in somatic cells of the same organism.

C In the corresponding figure :

If the object moves from point (A) to point (C) passing through point (B) in time of 10 sec. Calculate value of the velocity (write the used law).



17 El-Minia Governorate

Answer the following questions :

Question 1

A Write the scientific term of each of the following :

1. It is the change in the position of the object as time passes according to a fixed position.
2. It is the point that is in the middle of the reflecting surface of the mirror.
3. It is the displacement covered in one second.
4. A disease that infects the eye lens, so it becomes opaque.

B What happens in the following cases ...?

1. The crossing over phenomenon does not occur during prophase.
2. If the body is put in front of a convex lens at a distance equal to the focal length.
3. Focusing laser on the nano gold molecules which are injected into the cancer patient.
4. If a light ray falls perpendicular to surface of plane mirror.

C If a car moves from rest and its speed reaches 25 m/s. during 10 seconds. Calculate the acceleration by which the car moved and mention its type.

Question 2

A Correct the underlined words :

1. Pilots take into consideration the average speed of the wind.
2. Euglena reproduces asexually by sporogony.
3. When the object moves by uniform speed, it moves by increasing acceleration.
4. Chromosome chemically consists of RNA and protein.

B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. An optical piece is located to the left hand side of the driver	a. concave lens.
2. The owner of Nebular assumption	b. convex lens.
3. The increase in the diameter of eye ball is treated by using	c. as a result of nuclear reactions that occur inside it.
4. The sudden explosion of the stars is related to	d. convex mirror.
	e. Laplace.

C In the opposite figure if a person moves from point (A) to point (B) and returns to point (C) during 10 seconds. Calculate :



1. Total covered distance.
2. Displacement.
3. Velocity.

Question 3

A Complete the following statements using the words between brackets :

(less than – mitosis – greater than – fertilization – distance)

1. Somatic cells are divided by division.
2. The product of the speed of moving object multiplied by time is equal to
3. Sexual reproduction depends on two main processes which are formation of gametes and
4. The ratio between final speed and initial speed for a body moves by increasing acceleration is whole one.

B Put (✓) or (✗) :

1. Before starting division, the cell passes through interphase. ()
2. Force is considered as a scalar physical quantity. ()
3. When brakes are used, the car moves by negative acceleration. ()
4. The male gamete contains double the number of chromosomes of the female gamete. ()

① In the opposite figure

Draw two light rays to determine the position of the formed image and state its properties.



Question ٤

A Choose the correct answer from the given answers .

1. The two gases which form stars and galaxies by about 1 - 3 respectively
a. helium and nitrogen b. hydrogen and helium
c. oxygen and nitrogen. d. helium and hydrogen
2. Which of the following graphs represents the movement of an object with constant speed ?

a. b. c. d.
3. _____ is/are located in one of the spiral arms of the Milky Way
a. Galaxies b. Solar system c. Moons d. Old stars
4. One of the students takes 3 minutes to go to school from his home, moving by average speed equals 5 m/s, so the distance between his home and the school equals
a. 48 m b. 15 m c. 0.9 km d. 1.2 km

B Extract the different word from the following words, then write the relation which connect the rest words:

1. Pollen grains – Ova – Pancreas – Sperms.
2. Used in medicine – Used in manufacture of solar oven – Involved in the manufacture of space observation telescopes – Placed on the railway platforms.
3. Yeast fungus – Amoeba – Hydra – Sponge.
4. Made of glass – Placed stick to the eye cornea – Very thin lenses – Made of plastic

C You have concave mirror – ruler – screen – source of light.

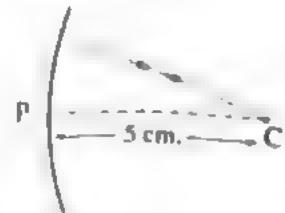
Explain how to determine the focal length of this mirror.

18 Assut Governorate

Answer the following questions :

Question 1**A Complete the following sentences :**

1. defect leads to formation of the image behind the retina.
2. A person climbed a palm tree for six metres to collect dates and then he returned to his starting point on the ground, his displacement is equal to
3. In the mitotic division (mitosis), the centromere of each chromosome splits lengthwise into two halves during
4. In the opposite figure : on placing an object in front of the reflecting surface of the mirror at a distance 6 cm from its pole, the ratio between the length of the image formed by the mirror to the length of the object is

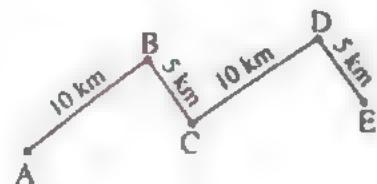
**B Correct the underlined words :**

1. Gametes in living organisms are produced by special cells known as somatic cell.
2. Real image can not be received on a screen.
3. The relative speed of a moving object relative to an observer moves at the same speed in the opposite direction is the same the actual speed.
4. If an incident light ray falls passing through the optical centre of the convex lens, it exists passing through the focus.

C In the opposite figure :

A car has traveled from (A) to (E) within an hour.

Calculate the average speed at which the car is moving in m/sec.

**Question 2****A Choose the correct answer :**

1. The (is / are) located in one of the spiral arms of the milky way galaxy.

a. galaxies	b. solar system
c. moons	d. stars
2. It is possible to produce new plants identical the mother plant by

a. fertilization.	b. budding.
c. tissue culture.	d. formation of gametes.



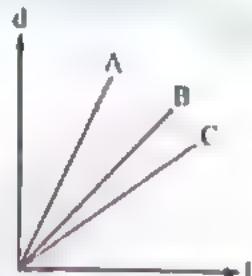
3. The image can be magnified by using the lens.

- a. concave
- b. convex
- c. concave and convex
- d. there is no correct answer

4. The opposite graph represents the relation

between the displacement (d) and time (t) of three students A, B and C start their motion from rest, so

- a. the velocity of (C) = The velocity of (B) = The velocity of (A).
- b. the velocity of (A) > The velocity of (B) > The velocity of (C).
- c. acceleration of (A) > acceleration of (B) > acceleration of (C).
- d. there is no correct answer.



B Choose the odd word (or statement) out and write the relation between rest statements or words :

1. Liver cells / Testis cells / Stomach cells / Pancreas cells.
2. Front bulbs of cars / Car parking / Solar ovens / The telescopes that monitor the space.
3. Mass / Time / Force / Temperature.
4. Nebular theory / The Crossing Star theory / The Modern theory / Big Bang.

C 1. Compare between : Scalar physical quantity and vector physical quantity (according to definition).
2. What happens when a car driver presses the brake to stop it after a certain time ?

Question 3

A Write the scientific term for the following statements :

1. A process that contributes in genes exchanging between the two homologous chromosome's chromatids and distributing them randomly in the gametes.
2. Mathematical methods used by physicists to predict the relation between certain physical quantities.
3. An optical device used to follow up battles in wars.
4. The result of multiplying double the speed of a moving object by half of the time.

(A) Write the name of biological processes or the phenomena which indicate the following sentences :

1. The solar system was originally a big star which is the Sun.
2. The ability of some animals to compensate their missing parts.
3. It is the bouncing the incident light ray in the same medium when it strikes a reflecting surface.
4. It carries the genetic information of the living organism.

(C) Give reasons for the following :

1. The word AMBULANCE is written in laterally inverted way on the ambulance car.
2. It is practically difficult to a car to move with a regular speed.

Question 4

(A) Choose from column (B) what suits it in column (A) :

(A)	(B)
1. If yeast fungus is put in warm sugary solution	a. formed from intersection of extensions of reflected light rays.
2. Motion	b. the straight line that passes by the pole of the mirror and its centre of curvature.
3. The secondary axis of the mirror	c. is the change of an object's position as time passes according to the position of another fixed object.
4. The virtual focus of the lens	d. reproduce by sporogony. e. reproduce by budding. f. the straight line that passes by the centre of curvature of the mirror and any point on its surface except the pole of the mirror. g. formed from intersection of extensions of refracted light rays.

(B) Write the number which refers to :

1. The ratio of hydrogen gas in the universe within minutes of Big Bang.
2. The radius of convex mirror which its focal length equals 20 cm.
3. The acceleration when an object moves with a constant speed.
4. The time that the Sun takes to complete one rotation around the centre of the galaxy.



C The following microscopic images illustrate the first meiotic division phases :



1. Identify each phase.
2. Arrange these phases according to the priority of occurrence.

19 Sohag Governorate

Answer the following questions :

Question 1

A Complete the following statements :

1. A car moves at a regular speed covers 300 metres in half minute, so its speed equals m/sec.
2. The upright and equal image is formed by
3. The Sun takes about to complete one rotation around the centre of the galaxy.
4. It is possible to produce new plants identical to the parent plant by

B Write the scientific term for each of the following :

1. The point of connection of two chromatids of the chromosome
2. The straight line joining between the two centres of curvature of the lens.
3. Glowing gaseous sphere revolving around itself that formed the solar system.
4. Angle of incidence = Angle of reflection.

C Show by drawing only :

Formation of an equal image for the object by convex lens, then mention the position of the image.

Question 2

A Put (✓) or (✗) in front of the following sentences :

1. The contact lenses can stick to the eye cornea by the eye fluid and can be easily removed. ()

2. Unicellular protozoans reproduce by binary fission.

3. The acceleration is from scalar physical quantities and its measuring unit is m/sec².

4. When the object moves in a straight line and in one direction, the covered distance by the object equals its displacement.

(B) What happens when ... ?

1. A starfish loses one of its arms, while it contains a part of the central disc.

2. A kind of living organisms stops its reproduction process.

3. A light ray falls on a plane mirror with an angle equals 60°.

4. A reproductive cell divides meiotically in the human body.

(C) A bus moves in a straight line, its speed changes from 6 m/sec. into 12 m/sec. through 3 sec. What is the amount of acceleration ?

Question 3

(A) Correct the underlined words :

1. It is possible to identify the speed of the car directly by using compass.

2. In the long-sightedness person, the light rays are collected at a point in front of eye retina.

3. The parent cell disappears during reproduction of Bread mould fungus.

4. The scientist Laplace established Crossing Star theory.

(B) Choose from column (B) what suits it in column (A) :

(A)	(B)
1. The pole of the mirror	a. it is the displacement covered by the object in one second.
2. Velocity	b. it is responsible for formation of spindle fibers in the animal cell.
3. Crossing over phenomenon	c. it is the point that lies in the middle of the reflecting surface of it.
4. Centrosome	d. it takes place between the two inner chromatids of each tetrad.

(C) Give a reason for : explosion of some stars suddenly.

Question 4

(A) Extract the odd word and write the scientific term for the others :

1. Testis – Ova – Ovary – Anther.

2. Liver cells – Pancreatic cells – Stomach cells – Testis cells.

1. Velocity - Acceleration - Displacement - Mass

4. Used in binoculars - Used in front of the eyes in medical eye glasses.

(D) From the opposite two figures answer the following:

1. What is the name of the living organism which is represented by each figure?

2. What is the type of reproduction in each figure?

(E) In the opposite figure, an object starts moving from point (A) and covers 30 metres northward then 60 metres eastward and then 30 metres southward. Calculate :

1. Total distance covered by the object

2. Amount of displacement.

20 Qena Governorate

Answer the following questions :

Question 1

(A) Complete the following sentences :

1. Time is a physical quantity.

2. The sightedness is treated by using a medical eye glasses.

3. The centre of mirror curvature in the concave mirror lies the reflecting surface.

4. is the regular speed by which the object moves to cover the same distance in the same time.

(B) Choose from column (B) what is suitable from column (A), and rewrite the whole sentence

(A)	(B)
1. The image which is formed by plane mirror	a. is virtual, erect and equal to the object
2. The image which is formed by concave lens	b. reproduces asexually by producing spores
3. Starfish	c. is virtual, erect and diminished
4. Bread mould fungus	d. is real, inverted and diminished
	e. reproduces asexually by regeneration

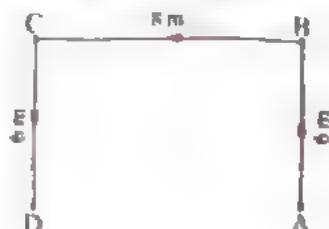
C An object is put at a distance of 20 cm from a concave mirror, its focal length is 8 cm :

1. Draw a diagram to show the path of the rays falling on the mirror and the rays that are reflected from it.
2. Mention the properties of the formed image.

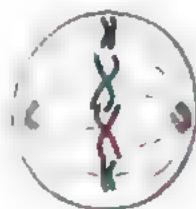
Question 2

A From the figures in front of you, answer what is required below :

1. The opposite figure represents a body moved from point (A) to point (D) passing through points (B) and (C) within 4 seconds, find :
 - a. The average speed of the body.
 - b. The velocity of the body.



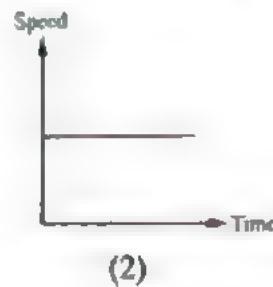
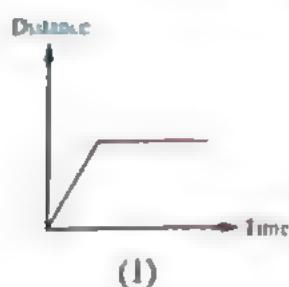
2. The opposite figure represents one of the phases of cell division :
 - a. This phase belongs to division.
 - b. The follows the phase shown in the figure.



B Cross out the unsuitable word (or the sentence) in the following :

1. The Nebular theory / The Crossing Star theory / The Big Bang theory / The Modern theory.
2. Seeing the parts of the watch / Correcting vision defects / In solar oven / In binoculars to follow the battles.
3. At car park / In front lights of the car / At shopping centres / At the corners of narrow roads.
4. Andromeda Galaxy / The Sun / The Saturn / The Earth.

C Describe the motion of the objects in each of the following figures :





Question 3

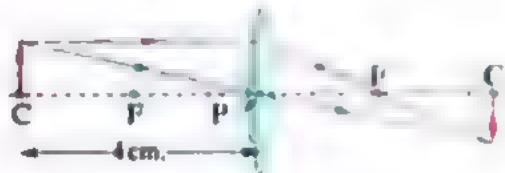
A Write the scientific term for each of the following statements .

1. The distance covered through a unit time.
2. The point of connection of two chromatids together of the chromosome
3. Mathematical methods that physicists use to predict the relation between physical quantities.
4. The cell resulting from the fertilization process and containing the complete number of chromosomes of the living organism.

B Put (✓) in front of the correct statements or (✗) in front of the wrong ones in the following :

1. When an object moves at a constant speed, this means that it moves at uniform acceleration. ()
2. The tissue culture is used to produce new plants identical to the original plant. ()
3. If two cars are moving in opposite directions at speed 100 m/s, so the relative speed of one of the two cars relative to the another one equals zero. ()
4. Sexual reproduction keeps the genetic structure of the living organisms. ()

C From the opposite figure, an object was placed at a distance of 4 cm from the optical centre of the lens, then an image is formed for it as shown in the figure find :



1. The focal length of the lens = cm.

2. The distance that the object should move towards the lens to let the light rays pass from the lens parallel = cm.

Question 4

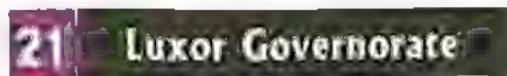
A Correct the underlined words in the following sentences :

1. Distance is the value of displacement in one second.
2. Sudden violent chemical reactions occur within the star which lead to its explosion.
3. If a car moves at a regular speed of 72 km/h, this means that it covered a distance of 1440 metres in 20 seconds.
4. According to the Big Bang theory, within minutes from the origin of the universe, the ratio between helium and hydrogen gas was 1 : 1

B Choose the correct answer :

1. A convex lens with a focal length of 50 cm, an object was placed at a distance of 80 cm from the lens, the image of the object is formed at a distance from the lens.
 a. greater than 100 cm b. equals 100 cm
 c. equals 50 cm d. equals 30 cm
2. The phenomenon of crossing over occurs in the of the first meiotic division.
 a. telophase b. metaphase c. anaphase d. prophase
3. If the angle between the incident light ray and the reflecting surface is 40° , so the angle of reflection =
 a. zero b. 40° c. 50° d. 80°
4. The number of chromosomes in the sperm the number of chromosomes in a female ovum (egg) of the same species.
 a. double b. equals c. half d. quarter

C What happen if the nucleus of the living cell is removed ?



Answer the following questions :

Question 1

A Complete the following sentences :

1. The movement 25 m eastward is considered physical quantity.
2. mirror is used in some types of telescopes.
3. When the object covers equal distances at unequal periods of time, so the speed is
4. The eye lens becomes dark when the eye is infected with

B What happens when ... ?

1. A light ray is incident by an angle 90° on a plane mirror.
2. A meiotic division occurs in the anther of a flowering plant.
3. An object is put at the focus of a convex lens.
4. Not separating of the growing buds from the parent cell in yeast fungus after full growing.

C A car moves at a speed 80 m/sec., if the driver reduces the car speed by 4 m/sec^2 . Calculate the speed of the car after 12 sec.

Question 2

A Write the scientific term for each of the following

1. The actual length of the path that a moving object covers from the starting point to the ending point.
2. The point of connection of the two chromatids of chromosome.
3. The change of the speed in one second.
4. The ability of animals to compensate their missing parts.

B Correct the underlined words :

1. A concave mirror of a focal length 10 cm, so its radius of curvature = 5 cm.
2. Each group of stars gather to form solar system.
3. The point that lies in the middle of the reflecting surface of the spherical mirror is called the focus of the mirror.
4. The Nebular theory assumed that the origin of the solar system was a glowing solid mass revolving around itself.

C Explain : The moving object whose end position is the same as starting position of his movement, his velocity equals zero.

Question 3

A Choose the correct answer :

1. If the regular speed of a car is 90 km/h, so this means that it covers m in 40 sec.
a. 1000 b. 200 c. 25 d. 4000
2. Mitotic division leads to
a. formation of pollen grains. b. growth of living organisms.
c. formation of ova. d. formation of sperms.
3. Two trains move parallel to each other but in the opposite direction with the same speed. so the relative speed of the first train is equal the speed of the second train.
a. quarter b. half c. three quarter d. double
4. One of the asexual reproduction types that mostly occurred in algae and fungi is
a. regeneration. b. spore propagation.
c. budding. d. vegetative reproduction.

(B) 1. In the opposite figure :

- a. It represents cell division
- b. The produced cell from the fertilization is called

2. A person moves from the starting point 20 m. westward then he returns back on the same road 8 m. eastward, calculate :

- a. The distance that he covers from the starting point.
- b. The difference between the distance and the displacement

(C) Give a reason for it is impossible to obtain a real image by using a concave lens.

Question 4

(A) Choose from column (B) what suit sit in column (A) :

(A)	(B)
1. The (distance – time) graph for uniform speed is represented by	a. is the scientist Laplace.
2. The founder of Crossing Star theory	b. a straight line passing by origin point.
3. The (speed – time) graph for uniform speed is represented by	c. is the scientist Fred Hoyle.
4. The founder of the Modern theory	d. a straight line parallel to the time axis.
	e. are the scientists Chamberlain & Moulton.

(B) 1. The cell nucleus contains a number of chromosomes represents the genetic material of the living organism :

First : Mention the chemical structure of chromosomes ?

Second : Explain the difference between the number of chromosomes in somatic cells and gametes.

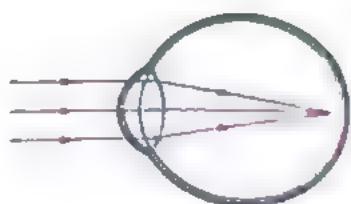
2. Explain by drawing :

First : The formation of the image of a body in front of a concave mirror at a distance equals to the double of its focal length.

Second : The path of the light ray that incident parallel to the principal axis of a convex lens.

(C) In the opposite figure :

1. What is the type of the vision defect ?
2. What is the range that the normal person can see objects clearly ?



22 Aswan Governorate

Answer the following questions :

Question 1

A Complete the following .

1. The vision defect which is resulted from a decrease in the refractive index called
2. The length of the actual path covered by a moving body from the start point to ending point is called
3. The distance between the object and the plane in the case of formation of its image from the object.
4. The car speed can be identified directly by using

B Choose from column (B) what suits it in column (A)

(A)	(B)
1. Centromere	a. the centre of sphere that the mirror is a part of
2. Pole of mirror	b. the point inside the lens that focus the parallel rays
3. Centrosome	c. responsible for formation of spindle fibers in the cell.
4. The optical centre	d. the point that lies in the middle of the radius of curvature of the mirror.
	e. the point of connection of the two chromatids

C When do the following cases happen ...?

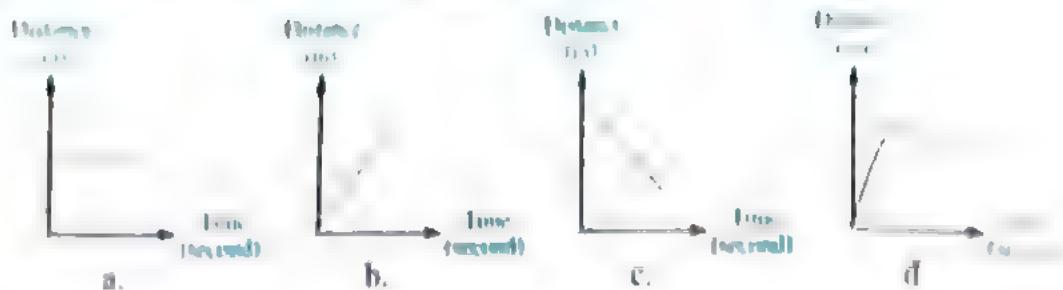
1. The relative speed of a moving object is less than its real speed
2. The distance covered equals the amount of displacement happened

Question 2

A Choose the correct answer :

1. The contains genetic material from both parents, and gives half of each parent's genes to the offspring.
a. gamete b. zygote c. cytoplasm d. chromosomes
2. When an object completes one rotation in a circular path of diameter 10 m, the displacement is
a. 10 m b. 5 m c. 2.5 m d. zero
3. The reproduction is considered a source of genetic variation.
a. asexual b. binary fission c. sexual d. budding

4. The graph represents a body at rest



B First : Put (✓) or (✗) :

1. The Crossing Star is the largest star can be seen from the surface of the Earth. (✓)
2. The two gases which produced galaxies, stars and universe over the million years are helium and hydrogen. (✗)

Second : Write what happens for the incident light ray of the following cases :



C A car moves from rest, then its speed increases to be 20 m/sec. through 4 seconds. Calculate the acceleration by which the car moved.

Question 3

A Write the scientific term :

1. The value of displacement covered in one second.
2. The cellular division that responsible for the formation of gametes.
3. The change of an object position as time passes according to the position of another fixed object.
4. The phenomenon of genes exchanging between the two inner chromatides.

B Put the following words in the brackets in their correct place below :

(anaphase – mass – metaphase – prophase – force)

1. The chromosomes migrate towards the cell equator in
2. is considered as an example of vector physical quantity, while is an example of scalar physical quantity.
3. The spindle fibers are formed during the cell division in

C Show by drawing : The path of light rays that form an image of an object placed between the focus and the centre of curvature of a concave mirror.

Question 4

A Correct the underlined words :

1. A moving car moves 180 km in two hours, so its speed is 50 m/sec.
2. From the theories that explain the origin of the universe is the Modern theory.
3. When an object moves by a uniform speed, it covers equal distances in equal periods of time.
4. Galaxy is a glowing gaseous sphere revolving around itself and its glowing disk split gradually and formed the solar system.

B Write one example for each of the following :

1. A living organism reproduces by regeneration.
2. An optical piece which is used to treat the short-sightedness.
3. A phase in mitosis division in which the cell prepares for division.
4. An optical piece that always forms virtual, reversed and equal image for an object.

C The opposite figure shows the reproduction by budding in yeast fungus. Answer for the following :

1. What is the type of the reproduction in this fungus ?
2. Mention an example for multicellular living organisms reproduce by budding



23 Red Sea Governorate

Answer the following questions :

Question 1

A Complete the following sentences :

1. The result of multiplying speed of a moving object by time equals
2. The point that is in the middle of the reflecting surface of the spherical mirror is
3. A vision defect results due to the decreasing of the eyeball diameter .
4. If two cars move in opposite direction to each other with the same speed equals 100 km/h for both of them, the speed of the second car is estimated by the driver of the first car as

3

B Cross the odd word out, then find the relation between the others:

1. Yeast - Fungus - Hydrin - Sponge - Bacterin
2. Old age - Genetic readiness - Cancer - Side effects of drugs
3. Liver cells - Pancreatic cells - Testis cells - Intestinal cells
4. Concave mirror - Convex mirror - Plane mirror - Convex lens

C A racer covered 50 metres northward within 20 seconds, then 100 metres eastward within 40 seconds, then 50 metres southward within 10 seconds and then returns back to the start point within 30 seconds. Calculate the following :

1. Average speed of the racer.
2. Displacement.

Question 2

A Write the scientific term of each of the following statements :

1. Asexual reproduction occurs by different parts of the plant without seeds.
2. The length of the shortest straight line between two positions.
3. A phenomenon of exchanging parts of the inner chromatids in each tetrad.
4. The physical quantity which magnitude is enough for identifying it.

B Choose the correct answer :

1. The continuous expansion of the universe is due to of galaxies.
a. separation b. approaching c. slow motion d. stability
2. When an object of length 4 cm. is placed at 8 cm. from a convex mirror so the length of the formed image will be
a. 16 cm. b. 8 cm. c. 4 cm. d. less than 4 cm.
3. The scientist who established the Modern theory is
a. Moulten. b. Fred Hoyle. c. Laplace. d. Chamberlain.
4. The radius of curvature of mirror equals of its focal length.
a. double b. half c. quarter d. three times

C Give reasons for :

1. The body which moves with acceleration can't move with regular speed.
2. It is practically difficult for a car to move with regular speed.

Question 3

A Correct the underlined words :

1. The chemical acid carries the genetic traits of the living organism.
2. The speed of the car can be determined directly by using the compass.

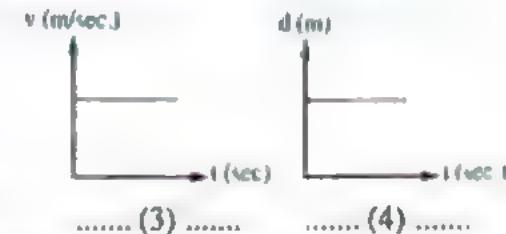


3. The metaphase is the phase in which the cell is prepared for division by duplicating the genetic material.

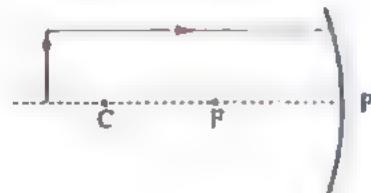
4. If the uniform speed of a car is 72 km/h, this means that its speed equals 18 m/sec.

B Complete the spaces in the following table and describe the motion in graphs :

Point of comparison	Mitotic cell division	Meiotic cell division
The number of resulting cells	..... (1) .....	..... (2)



C An object is placed in front of concave mirror as in the opposite figure. Transfer the drawing to your answer paper then complete the path of incident rays to form the image and mention the properties of the formed image.



Question 4

A Put (✓) in front of the correct statement and (✗) in front of wrong one :

1. The solar system is located in one of the spiral arms of the Milky Way galaxy. ()
2. The time is a vector physical quantity and the force is a scalar physical one. ()
3. The universe was formed due to merging the particles of oxygen and hydrogen gases. ()
4. Light is the thing that moves at a constant speed in the space. ()

B Put the following words and numbers in the suitable spaces in the following statements :

(23 pairs – zygote – 30° – 60° – virtual – fertilizers – 23 – 46 – real)

1. The male gamete combines with the female gamete to form
2. If the angle between the incident light ray and reflected light ray on a plane mirror is 120° , so the angle of incidence equal
3. The image that can be received on a screen is
4. If the number of chromosomes in somatic cells of a living organism is 23 pair of chromosomes, what is the number of chromosomes in gametes of the same living organism

C What would happen in the following cases ...?

1. The incident light ray falls parallel to the principal axis of the concave lens.
2. Absence of centrosome from the animal cell.

24 North Sinai Governorate

Answer the following questions :

Question 1

A Write the scientific term of each of the following :

1. The change in the position of an object as time passes relative to a fixed object.
2. The value of change in the object speed in one second.
3. The lens that is used to treat a person who can't see the near objects clearly.
4. The optical piece that forms an upright, virtual and equal image of the body.

B Choose from column (B) what suits it from group (A) :

(A)	(B)
1. Plant cells	a. in them the spindle fibers are formed from the centrosome.
2. Pole of the mirror	b. the point inside the lens that lies on the principal axis.
3. Animal cells	c. the centre of sphere that the mirror is part of it.
4. The optical centre	d. the point that lies in the middle of reflecting surface of the mirror.
	e. in them the spindle fibers are formed from the cytoplasm.

C A runner covered a distance of 300 metres in 30 seconds, then he returned back walking to the start point in 170 seconds. Calculate the average speed of his complete trip.

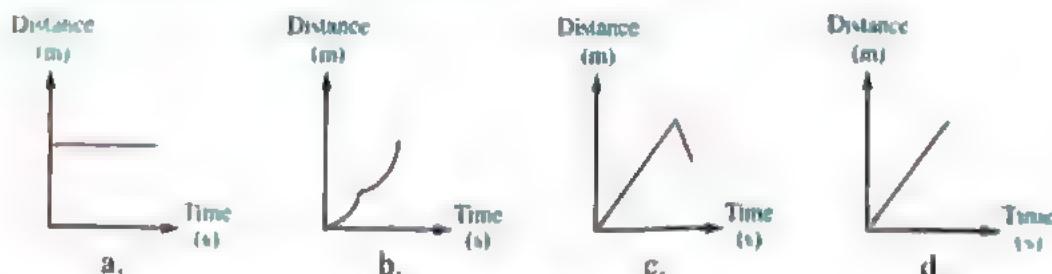
Question 2

A Choose the correct answer :

1. The distance covered through a unit time represents the

a. acceleration. b. displacement. c. length. d. speed.

2. The graph that represents an object at rest is



3. The number of chromosomes in the gamete is the number of chromosomes in the parent cell.

a. quarter b. half c. equal to d. double

4. The phenomenon of exchanging of the two inner chromatids of each tetrad is called the
 a) anaphase. b) metaphase. c) crossing over. d) prophase

Q1 Complete the following sentences with suitable words from the brackets
 (the solar system – the convex mirror – the galaxy – convex lens – universe –
 the plane mirror)

1. Real image can be obtained by using
2. A virtual, upright and smaller image of the body is formed by using
3. The Sun takes about 220 million years to complete one rotation around the centre of
4. The contains all the galaxies, stars and planets.

Q2 An object starts to move from rest at an acceleration equals 4 m/s^2 for 6 seconds.
 Calculate the final speed of this object.

Question 3

A Correct the underlined words :

1. The relative speed of a moving car relative to an observer at rest is less than the real speed
2. If an object moves at negative uniform acceleration, so its initial speed is equal to its final speed.
3. Chromatin reticulum condenses and appears in the form of long, thin and double strings in the telophase.
4. Gametes in living organisms are produced by special cells known as somatic cells.

B Find the different word that does not fit the following statements :

1. The scalar physical quantity : (mass – length – time – force).
2. They have the same units of measurement : (speed – distance – velocity – average speed).
3. Form unicellular protozoans : (amoeba – paramecium – euglena – bacteria).
4. Structure of the chromosome : (nucleic acid – cytoplasm – protein – centromere)

C Copy the opposite diagram in your answer paper then answer :

1. Draw the path of the rays which form the image of the body.
2. Mention the properties of the formed image.



Question 1

A Complete the following sentences :

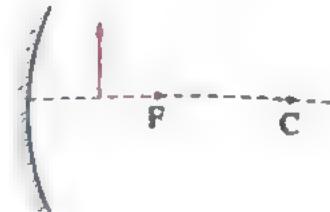
1. The distance covered at a certain direction is and it is a vector physical quantity.
2. The (speed - time) graph for regular motion at constant (uniform) speed is represented by a straight line to the time axis.
3. The solar system is located in one of the spiral arms of the galaxy.
4. The founder of Nebular theory is the scientist

B Put (✓) or (✗) in front of the following statements :

1. Each lens has one centre of curvature. ()
2. The incident light ray passing through the centre of curvature of the concave mirror reflects back on itself. ()
3. In interphase, the cell's genetic material is duplicated. ()
4. Yeast fungus reproduces asexually by budding. ()

C An object is placed in front of a concave mirror as in the following figure:

Transfer the drawing to your answer sheet then complete the path off incident rays, and mention the properties of the formed image.



25 South Sinai Governorate

Answer the following questions :

Question 1

A Write the scientific term of each of the following sentences :

1. The change of object speed by equal values through equal periods of time.
2. Methods that physicists use to predict the mathematical relations between different physical quantities.
3. The optical piece that is used to obtain equal reversed image to the object.
4. A vision defect results due to the increase in the convexity of the eye lens.

B Choose the odd word or phrase :

1. Fertilized ovum – Sperm – Zygote – Skin cell.
2. Solar ovens – Front lights of cars – Telescopes that monitor the space – Cars park.
3. Starfish – Sponge – Hydra – Human.
4. Concave lens – Convex lens – Virtual image – Erect magnified image.

C In the opposite graph if
the object speed at point (X) = 20 m/s
Calculate the covered distance at point (Y).

Question 2

A Correct the underlined words :

1. In reproduction by budding the cell of unicellular organism splits into two.
2. The irregular speed is the speed of a moving object relative to a static or a moving observer.
3. Crossing over phenomenon occurs at first anaphase.
4. When the object covers the double of distance at the same time, so its speed decreases to quarter.

B Choose the correct answer :

1. The continuous expansion of the universe as time passes is due to
 - a. approaching of galaxies.
 - b. separation of galaxies.
2. The light ray reflect on itself if
 - a. the angle between it and reflecting surface = zero.
 - b. the angle between it and the normal = zero.
3. Fred Hoyle assumed that the Sun controls in the orbits of planets around it due to
 - a. force of the Sun gravity.
 - b. speed of rotation of the Sun.
4. If you look at a water surface you can see your face image due to
 - a. reflection of the light rays coming from it.
 - b. refraction of the light rays coming from it.

C A car moves with initial speed equals 26 m/s at a uniform deceleration 5 m/s^2 . Calculate its final speed after 5 seconds.

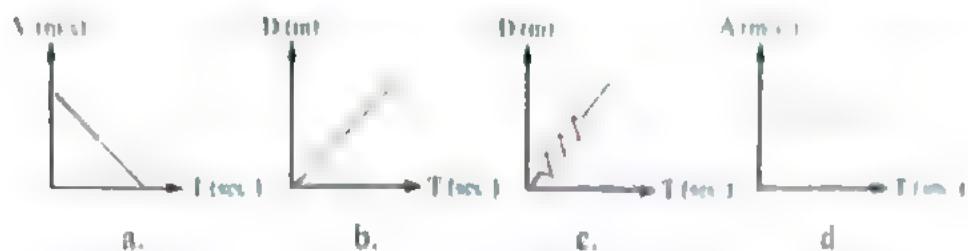
Question 3

A Complete the following :

1. A train moves at a speed 100 km/h, so it covers a distance 40 km within time hour.
2. Mitotic division occurs in cells.
3. The length of the pen = 66 cm is physical quantity.
4. The chromosome consists of two threads connected at

B Choose the correct answer :

1. Vegetative reproduction occurs in plants without need of
 - a. leaves.
 - b. stems.
 - c. roots.
 - d. seeds
2. When the object moves a distance = 20 m in straight line in one direction, so its displacement =
 - a. zero
 - b. 20 m
 - c. 40 m
 - d. 80 m
3. The reproduction by spores occurs in all of the following living organisms except
 - a. starfish.
 - b. algae.
 - c. bread mould.
 - d. mushroom
4. Which of the following graphs represents an object moves with zero acceleration ?
 - a.
 - b.
 - c.
 - d.



C In the opposite figure :

If the angle between incident light ray and the mirror's surface = 140° , so its angle of reflection =

Question 4

A Put (✓) or (✗) for the following :

1. The Big Bang theory depends on there is something that looks like clouds or nebula in the space. ()
2. The speed of a car moves with 120 km/h is less than the speed of a car moves with 40 m/s. ()
3. Solar system is located in one of the spiral arms of the Milky Way galaxy. ()
4. To identify the force we need to know its direction and its type. ()

B Choose from column (B) what suits it from column (A) :

(A)	(B)
1. Spindle fibers disappear in	a. instead of the medical glasses.
2. Spindle fibers shrink in	b. telophase.
3. Contact lenses	c. virtual, inverted diminished.
4. The properties of the formed image for a body by a convex mirror	d. anaphase.
	e. virtual, erect, diminished.

Q An object is put at 15 cm from the right side of a convex lens, a real inverted and magnified image is formed at 30 cm (greater than double of first length). Write the properties of the formed image if the object move to left 15 cm away from the lens.

26 The New Valley Governorate

Answer the following questions :

Question 1

A Write the scientific term of each of the following .

1. The point of connection of two chromatids together in the chromosome during division.
2. The change in the position of an object as time passes according to its present another fixed object.
3. The point inside the lens that lies on the principal axis in the middle of both concave spherical faces.
4. Asexual reproduction occurs by different parts of plant without the help of seed.

B Cross the odd word out in the following statements :

1. Mass - Time - Force - Distance.
2. Erect - Equal to the body - Reversed - Real.
3. Metaphase - Interphase - Prophase - Anaphase.
4. Bacteria - Bread mould fungus - Some algae - Mushroom fungus.

C If the relative speed of a car is 20 km/h relative to an observer moving with a speed 40 km/h in the same direction. Calculate the real speed of the car.

Question 2

A Choose the correct answer :

1. When a body moves by an acceleration equals zero, this means that
 - a. the speed of object is variable.
 - b. the speed of object is regular.
 - c. the speed of object is increasing.
 - d. the speed of object is decreasing.
2. When an object its length is 4 cm is put in front of a convex mirror, so the length of the image equals ...
 - a. 16 cm.
 - b. 8 cm.
 - c. 4 cm.
 - d. less than 4 cm.

3. The Sun takes about 220 million years to complete one rotation around the centre of
 a. the Sun. b. the universe. c. the galaxy. d. the Earth

4. When a light ray falls passing by the centre of curvature of a concave mirror.
 a. It reflects passing by the focus. b. it reflects on itself.
 c. it reflects parallel to the principal axis d. it doesn't reflect

B According to the Big Bang theory. Arrange the following events from the oldest to the latest.

1. The Sun was born and the Earth and planets were created.
2. Ancestral galaxies were originated.
3. Earliest life forms began to appear on the Earth.
4. Matter merged in the form of masses.

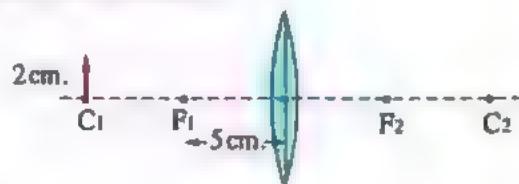
C What is meant by the distance between the principal focus of a spherical mirror and its pole is 20 cm ?

Question 3

A Correct the underlined words :

1. Amoeba reproduces by budding.
2. The contact lenses are put directly on eye retina and can be removed easily.
3. Sudden violent chemical reactions occur within the star which lead to its explosion.
4. If the angle between the incident ray and reflected ray on a plane mirror is 60° , so the angle of incidence = 20°

B Look at the opposite figure then answer :



1. Draw the paths of rays forming the image of object.
2. Complete the following :
 - The length of the image = cm.
 - The image is formed at distance cm from the optical centre of the lens.

C Give a reason for : displacement is considered as a vector physical quantity.

Question 1**A Complete the following statements :**

1. A train moves by a speed 40 m/sec. and when using the brakes, it moves by a negative acceleration its value is 2 m/sec.², so it stops after _____ seconds.
2. The number of chromosomes that produced from the reproduction of the mother cell (2N) of a starfish by regeneration equals _____.
3. _____ are put at the platforms of railway and metro stations to allow the driver opening and closing doors without passengers get injured.
4. If the speed of a car is 72 km/h, it means that its speed equals _____ m/sec.

B Match from column (B) what suits it from column (A) :

(A)	(B)
1. Convex lens is used to	a. established the Modern theory.
2. Fred Hoyle	b. treat short-sightedness.
3. Laplace	c. treat long-sightedness.
4. Concave lens is used to	d. established the Nebular theory.

C What happens when yeast fungus is put in a warm sugary solution ?**27 Matrouh Governorate****Answer the following questions :****Question 1****A Complete the following :**

1. When the object moves with speed, so it moves with equals zero.
2. Long-sightedness occurs as a result of eyeball diameter so the retina from eye lens.
3. Velocity and displacement are similar in and different in
4. The formed image by mirror is always minimized virtual).

B Correct the underlined words :

1. The focus is a point inside the lens in the mid distance between its faces, the principal axis passing through it.
2. If the nucleus of pollen grain of a plant contains 10 chromosomes, so the nucleus of its leaves cells contains 5 pairs of chromosomes.

3 From the properties of the image formed by a convex lens if a real inverted image is formed.

4 Pollination is combination of a male gamete and a female gamete in the ovule.

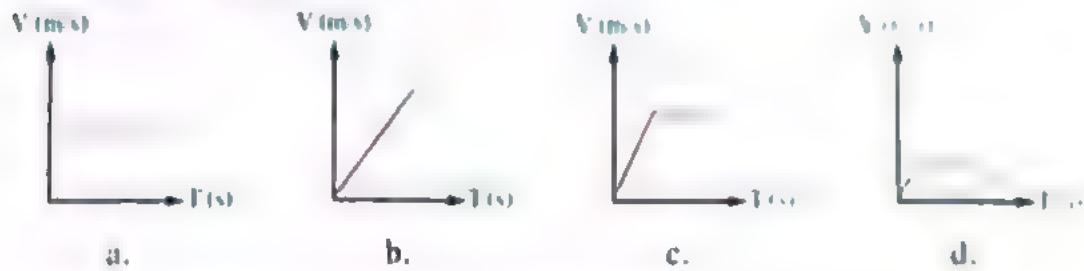
Q A car moved from rest and its speed increased to 10 m/s in 4 seconds. Then the car speed decreased to 5 m/s in 2 seconds. Calculate

- 1 The acceleration with which the car moved during the first period.
- 2 The time needed to stop the car if it moved in the same rate of change of speed in the second period.

Question 2

A Choose the correct answer :

1. contains genetic material from the two parents and grows to be an individual that combines the characteristics of both parents.
- a. Gamete b. Cytoplasm c. Zygote d. Chromosome
2. When the object moves in straight line, the ratio between the distance and the displacement one.
- a. less than b. equals to c. more than d. no correct answer
3. The reproduction by spores occurs in the following organisms except
- a. some algae. b. bread mould. c. mushrooms. d. starfish
4. Which of the following graphs represents motion of an object with uniform acceleration ? ..



B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Laplace	a. point that lies in the middle of the reflecting surface of mirror.
2. Pole of mirror	b. formed from the intersection of the extensions of refracted light rays.
3. Solar system	c. solar system is formed from glowing gaseous ball rotate around itself.
4. Principal focus of concave lens	d. lies on one of the spiral arms of Milky Way galaxy.
	e. virtual point inside the lens that the lies on the principal axis

Q What happens when ... ?

1. An observer moves in the opposite direction of moving object, then the speed ...
2. An object moves with uniform acceleration equals 10 m/s^2 .

Question 3

A Write the scientific term of each of the following :

1. The length of the shortest straight line between primary and final positions.
2. The part which is responsible for pulling the chromosomes towards the two poles of the cell during anaphase I.
3. The rate of change of displacement.
4. Ability of the missing part in some living organisms to grow forming a complete organism identical to the parent individual.

B Choose the odd word out, then find the relation between the others :

1. Mass – Density – Force – Time.
2. Fertilized ovum – Gametes – Zygote – Liver cell.
3. km/h – km/s – m/s – m/s.s.
4. Crossing over phenomenon – Condensing of chromatin reticulum – Nucleolus disappear – Splitting of centromere.

C Give reasons for :

1. The focal length for a thin convex lens is large.
2. No image is formed for an object if it placed at the focus of a concave mirror.

Question 4

A Put (✓) in front of correct sentences and (✗) in front of the false ones :

1. Motion of the object is described by uniform when average speed equals uniform speed. ()
2. A lot of old stars gather at the edge of the galaxy. ()
3. When the object moves in curved path, its speed equals velocity. ()
4. The Sun takes about 220 million years to complete one rotation around the centre of the Milky Way galaxy. ()

3

Q) **A. The following figure shows the diagram of two children playing with a ball.**



Mention the number of children who can form a real inverted image of the ball if the distance between the children is 30 cm.

Study the opposite figure, then answer the following:



The distance which the object must move to make the formed image is real inverted equal in size =

The distance that the object must move so light rays converge to each other =

B) An object of a length 3 cm is put at distance of 10 cm from a concave lens of focal length is 4 cm. Answer the following:

1. Show by drawing, the path and direction of incident and reflected rays to form a real image for the object
2. Mention the properties of the formed image

مجاناً و ج未必اً

حمل الان

امتحانات رمضان (4)

الشـمـالـيـوـلـ

RaNia-Sayed



Answer the following questions :

Question 1

A Complete the following statements :

1. The concept of is linked to the change of an object's position as time passes according to a fixed position.
2. In flowering plants, a cell division occurs in the anther to produce
3. The solar system is located in one of the spiral arms of the galaxy.
4. The mirror whose reflecting surface is a part of the outer surface of the sphere.

B Write one example for each of the following statements :

1. They are used instead of the glasses and can stick to the eye cornea and remove it easily.
2. A living organism reproduces by regeneration.
3. It is considered from scalar's physical quantities and measured by kilogram.
4. Cells are divided by meiosis to form gametes.

C An object moves in a straight line at a speed of 4 m/s in a certain direction, its speed reaches 20 m/s through 4 seconds. Calculate the acceleration of the moving object, mention its type.

Question 2

A Write the scientific term for the following statements :

1. A type of asexual reproduction takes place in plants by their different vegetative organs except seeds.
2. A speed of the moving object relative to a fixed or a moving observer.
3. It contains all the galaxies, stars and planets.
4. The length of the shortest straight line between two positions.

B Study the following figures, then answer :

1. The name of figure (1) is
2. Point (x) refers to
3. The name of figure (2) is
4. Point (y) refers to

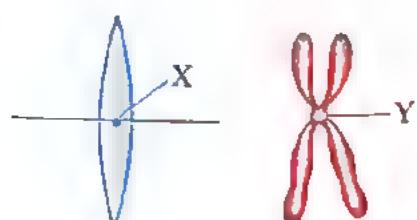


Figure (1)

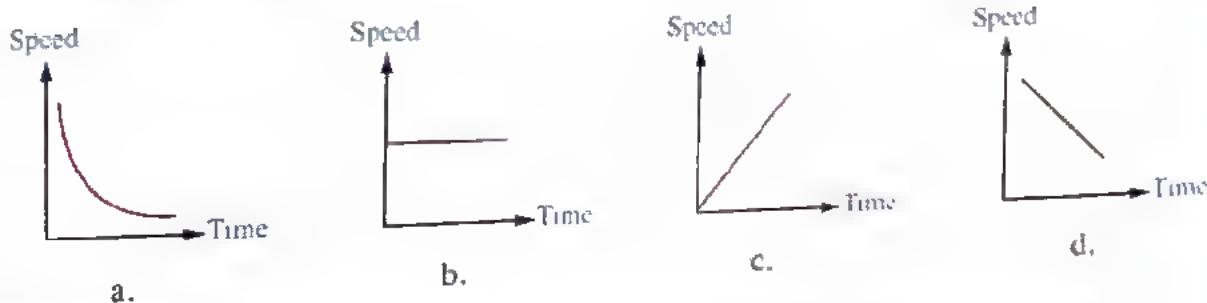
Figure (2)

C Give a reason for : The image formed by a plane mirror is always virtual.

Question 3

A Choose the correct answer :

1. The distance covered through a unit time represents the
a. acceleration. b. displacement. c. length. d. speed.
2. Laplace is the scientist who established the theory for explanation the evolution of the solar system.
a. Modern b. Nebular c. Crossing star d. Big Bang
3. In the mitotic division (mitosis), the centromere of each chromosome splits lengthwise into two halves during
a. anaphase. b. prophase. c. metaphase. d. telophase.
4. Which of the following (speed - time) graphs describes the movement of an object with constant speed.



B Put (more than – equal to – smaller than) in each of the following statements :

1. The image formed by concave lens is always the object.
2. The zygote contains number of chromosomes that in the somatic cells.
3. When an object moves at a positive acceleration, its final speed is its initial speed.
4. The radius of curvature is double the focal length of a spherical mirror.

C Compare between the following :

Velocity & uniform speed (According to the definition).

Question 4

A Correct the underlined words :

1. Acceleration is the value of change of displacement of an object in one second.
2. Helium and oxygen gases over the millions of years produced galaxies, stars and the universe.

3. In the mitotic division (mitosis), the nucleolus and nuclear membrane disappear at the end of metaphase.

4. When an object moves at regular speed, it covers equal distances at unequal periods of time.

B Choose from column (B), what suits it in column (A) :

(A)	(B)
1. Reproduction by budding	a. the point in the middle of the reflecting surface of it.
2. The pole of mirror	b. takes place between the inner chromatids of each tetrad.
3. Average speed	c. occurs in unicellular organisms such as yeast fungus.
4. The crossing over phenomenon	d. the result of dividing the covered total distance and the total time taken to that.

C Show by drawing the path of rays that form an image of an object that is placed at a distance greater than the radius of curvature of a concave mirror. Mention the properties of the formed image.

21 Giza Governorate

Answer the following questions :

Question 1

A Complete the following sentences by the suitable words :

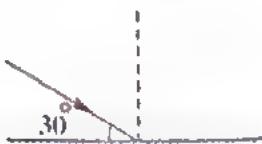
1. The change in the position of an object as time passes according to the position of another object is called
2. The convex mirror, whose reflecting surface is a part of the surface of the sphere.
3. is considered one of the fastest wild animals, where its speed is 27 m/s.
4. The object is put at a distance the focal length of the convex lens, the formed image is virtual, upright and enlarged.

B Choose the correct answer :

1. A light ray falls on a plane mirror as in the opposite figure, it reflects whose angle of reflection equals

a. 30°	b. 60°
c. 90°	d. 120°
2. The somatic cell with $2N$ chromosomes, its number in the reproductive cell is

a. $\frac{1}{2}N$	b. N	c. $2N$	d. $4N$
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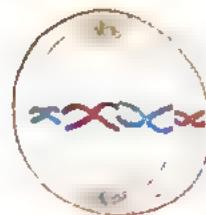


3. The person who suffers from one of the vision defects, the doctor advised him to use glasses with concave lenses, this means that he suffers from .

- decrease in the convexity of the eye lens surface.
- increase in the convexity of the eye lens surface.
- decrease in the eyeball diameter.
- can't see the near objects clearly.

4. The opposite figure represents one of the phases of the cell division, it is

- anaphase.
- prophase.
- interphase.
- metaphase.



C What is meant by ... ?

A car is moved by uniform speed, then it covered a distance 180 m. in a half minute. calculate the speed of this car.

Question 2

A Write the scientific term of each of the following statements :

- The value of change of an object's speed in one second.
- The part which is responsible for splits lengthwise of chromosomes into two poles of the cell during anaphase.
- A type of asexual reproduction that takes place in plants by different vegetative organs without the need of seeds.
- The regular speed by which the object moves to cover the same distance at the same period of time.

B Correct the underlined words :

- Convex lens its focal length 20 cm. when we put an object at 40 cm. from the lens. the forming image at 20 cm. distance.
- The crossing star theory is founded by scientist Laplace.
- Concave mirror its radius of curvature equals 16 cm, then the focal length of it 32 cm.
- Each galaxy has a distinctive shape according to harmony and order of the groups of planets in it.

C When it happens ? The real speed of a moving object is equal to its relative speed.

Question 3**A** Put (✓) or (✗) in the front of the following statements :

1. The starfish reproduces asexually by binary fission. ()
2. The moving body in regular speed is represented in graphical relation (distance – time) by a straight inclined line passing through the origin point. ()
3. The meiotic cell division is occurred in the somatic cells. ()
4. If a person riding a bicycle and covered a distance 1700 m at east, then covered 1900 m at west, the difference between displacement and distance traveled equals 200m. ()

B Find the different word that does not fit the following statements :

1. From unicellular protozoan : (Amoeba – Paramecium – Euglena – Bacteria)
2. From the properties of the image which is formed by the concave lens : (Erected – Diminished – Real – Virtual)
3. The importance of mitosis cell division in : (Produce eggs – Compensation of the damaged cells – Produce a cells similar to the parent cell – Growth of living organisms)
4. The virtual image is always : (Is formed as a result of the intersection of the extensions of the light rays – It cannot be received on a screen – Upright – In front of the mirror)

C What are the results when we placing a plane mirror to the right and left of the driver instead of the convex mirror ?**Question 4****A** Choose from column (B), what suits it in column (A) :

(A)	(B)
1. The vector physical quantity	a. the product of moving object's speed multiplied by time.
2. The universe	b. from the fusion of atomic particles produced by the Big Bang.
3. The distance	c. enough to identify its magnitude as well as direction.
4. The containing of helium and hydrogen gases	d. that contains galaxies, stars, planets and living organisms.

B Study the following figures, then answer the questions :

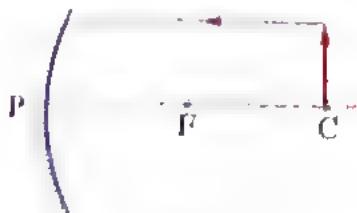


Figure (1)

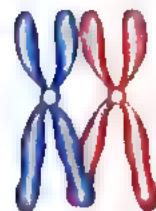


Figure (2)

1. Show by drawing the path of the incident ray which falls on the concave mirror surface.
2. Mention the properties of the formed image.
3. The figure : represents one step of a biological phenomenon, what is the name of this phenomenon ?
4. What is the results if this phenomenon doesn't happen ?

C What happen when ? Putting a yeast fungus in a warmed sugary solution.

3 | Alexandria Governorate

Answer the following questions :

Question 1

A Complete the following statements :

1. If the objects speed increases at a rate, then in this case the movement is described as
2. The formed image of an object by the plane mirror is , reversed, and equal to the object.

B Choose the correct answer :

1. A spherical mirror where its radius of curvature equals 60 cm, so its focal length is
a. 120 cm. b. 60 cm. c. 30 cm. d. 15 cm.
2. The arm of starfish could be regenerated and give out a complete animal if it contains a part of the
a. bud. b. zygote. c. sporangium. d. central disc.
3. A is used to correct the short-sightedness in the human.
a. convex lens b. concave lens c. convex mirror d. concave mirror
4. During the first meiotic division, the nucleolus and the nuclear membrane are formed in
a. prophase. b. metaphase. c. anaphase. d. telophase.

C Define the following : Relative speed.

Question 2

A According to the Big Bang theory, rearrange the following events from the oldest to the nearest :

1. The Sun was born then the Earth and planets were created.
2. Earliest life forms began to appear on Earth.
3. Matter got joined in masses.

B Choose from column (B), what suits statements in column (A) :

(A)	(B)
1. Plant cells	a. produce the gametes.
2. Animal cells	b. don't contain nucleus.
3. Reproductive cells	c. in them the spindle fibers are formed from the centrosome. d. in them the spindle fibers are formed from the cytoplasm.

C Give reasons for the following :

1. The convex mirror is placed to the left side of the car's driver.
2. The mitosis division plays an important role in the multicellular organisms life.

Question 3

A Write the scientific term for each of the following statements :

1. The length of the shortest straight line between two positions.
2. A process that contributes in genes exchanging between the two homologous chromosome's chromatids and distributing them in the gametes.
3. The speed by which the object moves to cover equal distances at unequal periods of time.
4. The combination of the male gamete and female gamete to form a zygote.

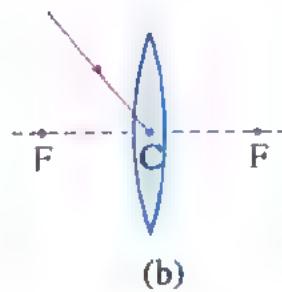
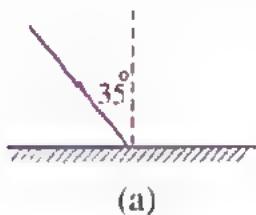
B Correct the underlined words in the following statements :

1. The scientist Fred Hoyle established the theory of nebular assumption about the evolution of the solar system.
2. The velocity is the total distance that a moving object covers divided by the total time.
3. The formed image behind the concave mirror is always virtual, upright and equal to the object.

C An object starts to move from rest at an acceleration equals 4 m/s^2 during 6 seconds. Calculate the final speed of this object.

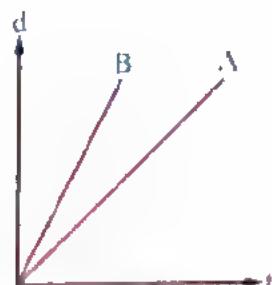
Question 4**A Put (✓) or (✗) in the front of the following statement :**

1. The force is considered an example of the scalar physical quantities. ()
2. Paramecium reproduces asexually by budding. ()
3. The compass is used to identifying the car's speed directly. ()
4. The chromosome is formed from two chromatids linked together by the centromere. ()

B What happens to the incident light ray in each of the following cases ?**C Show by drawing only with complete labels the pathway of the emitting light rays from an object placed at the focus of convex lens.****4 Qalyoubia Governorate****Answer the following questions :****Question 1****A Choose the correct answer :**

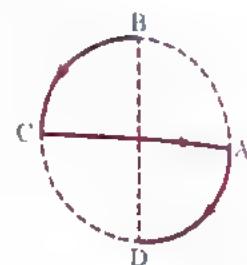
1. The opposite graph represents two bodies (A and B) start their motion from rest, so
 - a. the body (A) is faster than the body (B).
 - b. the two bodies are at rest.
 - c. the two bodies have the same speed.
 - d. the body (B) is faster than the body (A).
2. A person put a lens near his eyes, and looks through it. He noticed that the images seem upright. And after he moved the lens away from his eyes for a certain distance, he noticed that the images seem inverted, so we can conclude that the lens is

a. concave.	b. plane.	c. convex.	d. cylindrical.
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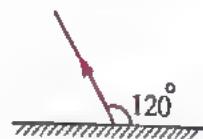
3. A body moves in a circular path whose radius is 14 meters, as in the opposite figure from point (B) to point (C), and then to point (D) passing through the point (A), so the displacement equals meters.

- a. 7
- b. 14
- c. 28
- d. 56



4. If a light ray falls on a surface of plane mirror and reflects as in the figure, so the angle of incidence equals degree.

- a. 30
- b. 60
- c. 90
- d. 120



B Complete the following statements :

1. Increasing in the convexity of eye lens surfaces leads to
2. In the interphase during the cell division duplicates.
3. An object put in front of a concave mirror between the focus and the centre of the mirror curvature, so the properties of the formed image is
- 4 There is no part of the central disc with the missing arm, in the starfish leads to

C A car, its relative speed is 80 km/h. Calculate its actual speed in the following cases :

1. When the observer is at rest ?
2. When the observer moves in the same direction of the car with speed 30 km/h?

Question 2

A Write the scientific term for each of the following statements :

1. A type of reproduction that takes place by only one parent, without producing gametes.
2. The body that its position doesn't change as the time passes.
3. The point of connection of two chromatids of the chromosome together.
4. A vector quantity that equals the amount of displacement covered by the object in one second.

B Correct the underlined words in the following statements :

1. If the radius of curvature of a concave mirror equals 30 cm, so its focal length equals 30 cm.
2. The stars explosion phenomenon is related to the sudden chemical reactions.
3. The long-sightedness is corrected by using a concave mirror.
4. The two gases which produced galaxies, stars, and universe over millions of years are Nitrogen and Oxygen.

C A car moves from rest, then its speed increases to be 20 m/sec through 8 seconds – calculate the acceleration by which the car moves.

Question 3

A Choose from column (B), what suits it in column (A) :

(A)	(B)
1. A phenomenon that is considered as an important factor in variation of genetic traits among the members of the same species	a. parallel to the time axis
2. We can represent the motion at regular speed in the (speed-time) graph, by drawing a straight line	b. fertilization.
3. From the living organisms which reproduces asexually by budding	c. convex mirror.
4. We put on the right side and the left side of the driver in the car	d. euglena.
	e. crossing over.
	f. convex lens.
	g. parallel to the speed axis.
	h. Hydra.

B Study the two figures (1) and (2), then answer the questions in front of each figure :

- From the figure (1) calculate :

- The distance that the object should move towards the lens to form a real, inverted, equal image to the object =
- The distance that the object should move towards the lens to let the light rays pass from the lens parallel to each other =

- From the figure (2) complete the following :

- This living organism reproduces asexually by
- If the particles (X) fall on an unsuitable environment, so it

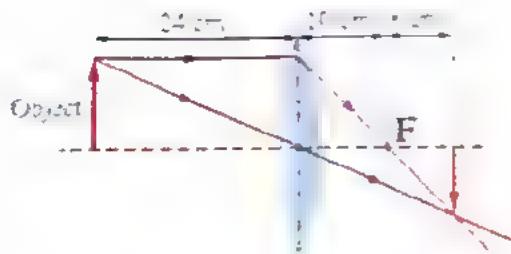


Figure (1)

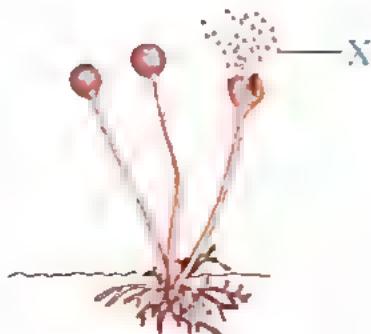


Figure (2)

C Which of the following two images is real and which of them is virtual ?

- An image of a child standing in front of a convex mirror.
- An image of a far object that can be received on a screen.

Question 4

A Put (✓) or (✗) in the front of the following statements :

- The speed by which the object moves when it covers unequal distances at equal periods of the time is called irregular speed. ()

PART 3

2. The galaxy is a glowing gaseous sphere revolving around itself. ()
3. The two essential factors by which we can describe the motion of an object are the speed and the time. ()
4. The continuous separation between galaxies in space as a result of their regular movement produces expansion of the universe. ()

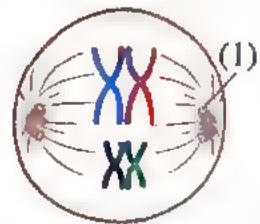
B Choose the correct answer from between brackets, then put it in the correct place in the following statements :

(yeast – focus – protein – pole of the mirror – bacteria – glass – fats – plastic)

1. The chromosome chemically consists of a nucleic acid DNA and
2. The contact lens is a very thin lens made of
3. From the living organisms which reproduces asexually by binary fission is
4. The imaginary point that lies in the middle of the reflecting surface of the spherical mirror is called

C Study the opposite figure that represents one of the phases of the cell division, then answer the following questions :

1. What is the type of this division and what is the type of the cells by which this type of division happen ?
2. What happens when the structure number (1) is absent in the animal cell ?



5

El-Menofia Governorate

Answer the following questions :

Question 1

A Write the scientific term for each of the following statements :

1. The speed of moving body related to a moving or a fixed observer.
2. The straight line that passes through the pole of the mirror and its centre of curvature.
3. Change the position of an object with the time related to a fixed point.
4. The lens that is used to treat a person who can't see the near objects clearly.

B First :

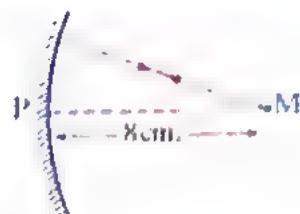
Determine the type of the cell division that is needed to carry out each process of the following :

1. The process of exchange parts of the inner chromatids of the tetrad.
2. Vegetative reproduction in plants.

Second : By using the opposite figure answer the following :

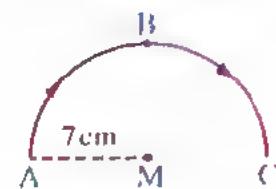
- Determine the focal length of the mirror.
- On placing an object in front of the reflecting surface of the mirror away (5 cm) of its pole, the ratio between the length of the image formed by the mirror to the length of the object is (Less than – More than – Equal) one.

Choose from those between brackets



C When a car passes from (A) to (C) through point (B) as in the figure calculate the magnitude of each ?

- The covered distance.
- The displacement. Knowing that ($\pi = \frac{22}{7}$)



Question 2

A Correct the underlined words :

- Pollination is the process during which male gamete fused with the female gamete forming zygote.
- A train covers (200 km) during (150 minutes) so its speed equals 90 km/hour.
- Algae can reproduce by spores and also by regeneration.
- A moved car by a speed of (V) to cover the distance between two cities in a time (t) then it returned at the same road between the two cities within a time (2 t) so the speed during its return equals (4 V).

B Choose the correct answer :

- A figure (L) was written on a white paper placed in front of the reflecting surface of a plane mirror, so the figure appears in the mirror as
- The time needed by the Sun to complete one rotation around the centre of its galaxy is
- When an object of (5 cm) length in front of a reflecting surface of a convex mirror at a distance equals its radius of curvature. So the length of the formed image will be
- The nebular theory suggested that losing heat of the nebula gradually leads to

a. 202 years. b. 220 thousand years.
 c. 202 million years. d. 220 million years.

a. 3 cm b. 5 cm c. 8 cm d. 9 cm

a. it is contracted and its revolving speed increase.
 b. it is expanded and its revolving speed decreased.
 c. both size and speed decrease.
 d. both size and speed increase.

C An object was put in front of the reflecting surface of a vertical plane mirror. the distance between the object and its image in this mirror was (5 meters). If the mirror is moved a distance, So that the distance between the object and its image became (4 meters). Determine the distance that moved by the mirror and its direction related to the object ?

Question 3

A Compare between each of the following concerning about that written between brackets :

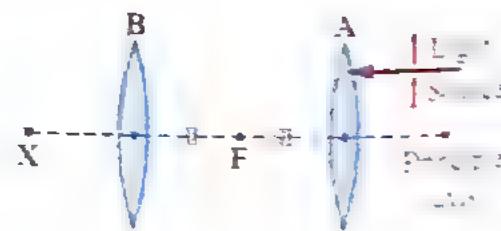
1. The mass – The acceleration in term of (type of the quantity – the measuring unit).
2. The plant cell and the animal cell in term of (formation of the spindle fibers during cell division).

B Put (✓) or (✗) in front of the following statements :

1. The traits of the produced individuals by sexual reproduction are different from the traits of their parents. ()
2. The dentist uses convex mirror during examination of the patients. ()
3. The genetic matter is duplicated during interphase of cell division. ()
4. On placing an object at the centre of curvature of a concave lens an equal inverted image of the object is formed. ()

C The figure represents two similar lenses (A , B) have a common principle axis and the principle focus of them at point (F) in the middle distance between them. An incident light ray falls on lens (A) parallel to its principle axis :

1. Copy the figure in your answer sheet then follow (trace) the path of the incident ray on the lens (A).
2. To make the light ray that passed through the lens (B) returns to its source on the other side of lens (A) we must fix (concave – plane – convex) mirror vertical at the point (X) ?
determine the type of the used mirror from those between brackets ?



Question 1

A First :

Replace the given numbers at the vertical (Y) axis in each of the following graphs by a suitable physical quantity to make the description under the graph correct.

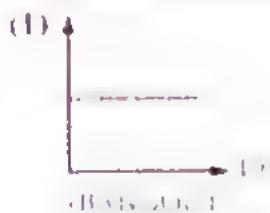


Figure (1)

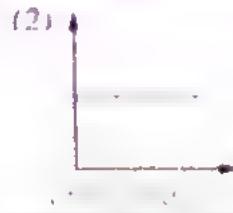


Figure (2)

Second :

The astronomers developed the following theories

(Crossing star theory – Nebular theory – The Big Bang theory – The Modern theory)

1. Determine the odd (anomalous) theory (due to its purpose)

2. Determine the purpose of the remained 3 theories.

B Complete the following by suitable words :

1. The spherical mirror that can be used in making solar ovens for cooking food is the

2. Hydra reproduces by

3. The increase of the eye lens convexity leads to its focal length.

4. is the site of connection of the two filaments that form the chromosome

C An ovum of an animal contains 16 chromosomes determine each of the following :

1. Number of chromosomes in the liver cell of this animal.

2. Number of chromosomes in the sperm that produced by the male of this animal.

6 Dakahlia Governorate

Answer the following questions :

Question 1

A Complete the following statements :

1. Correcting long-sightedness by using lens and correcting short-sightedness by using lens.

2. The spindle fibers are formed during the cell division in the phase and disappear in the phase.

3. Acceleration is physical quantity and the mass is physical quantity.

4. In the animal cell, the spindle fibers are formed by , while in plant cell the spindle fibers are formed by

PART 3

B Correct the underlined words :

1. A moving car covers 180 km in two hours, so its speed is 50 m/sec.
2. Gametes in living organisms are produced by special cells known as somatic cell.
3. The relative speed of a moving car relative to an observer at rest is less than the real speed.
4. The light ray that passes through the centre of curvature of a concave mirror reflects parallel to the principal axis.

C A car moves at speed 80 m/sec. if the driver used the brakes the speed decreases by 2 m/sec each one second. Calculate its speed after 12 seconds from using the brakes.

Question 2

A Choose the correct answer :

1. The optical piece that forms an equal and inverted image of the body is the
a. convex mirror. b. concave mirror. c. plane mirror. d. concave lens.
2. The parent individual disappears during reproduction of
a. bread mold. b. mushroom. c. bacteria. d. yeast fungus.
3. The scientist who established the nebular theory is
a. Chamberlain. b. Fred Hoyle. c. Laplace. d. Moulton.
4. The convex lens which has the least thickness from the following, its focal length is cm.
a. 1 b. 3 c. 5 d. 7

B Write the scientific term of each of the following :

1. The displacement covered in a unit time.
2. The type of asexual reproduction that occur in multicellular organisms such as hydra, and in unicellular organisms such as yeast fungus.
3. A theory that explains the origin of the universe due to a great explosion science 15000 million years.
4. The straight line that passes by the centre of curvature of the mirror and any point on its surface except the pole.

C What is the result based on ... ?

1. Light ray passes through the optical centre of the lens.
2. If the gravity between the Sun and planets which rotate around is vanished.

Question 3

A Put (✓) or (✗) in front of the following statements :

1. The light ray falls parallel to the principal axis of a convex lens, it emerges from it passing by its centre. ()
2. The Sun and the group of planets around which it revolves are called Milky Way. ()
3. Crossing over is the source of genetic variation between members of the same species. ()
4. Convex lenses are used in manufacture of solar ovens. ()

B Write the name of biological processes or the phenomena which indicate the following sentences :

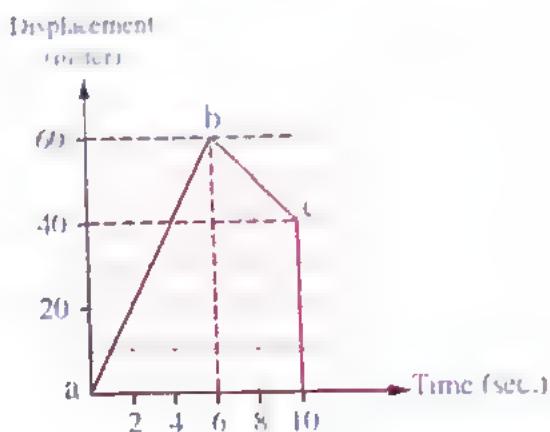
1. The ability of some living organisms to reproduce by compensating their missing parts.
2. The fusion between two different types of reproductive cells of one species of living organism to produce the zygote.
3. The bouncing off the light ray to the same side when it strikes a reflecting surface.
4. Decreasing the speed of a moving object by constant rate until it stops.

C In the following figure :

an object moves across
the path A → B → C

Calculate :

1. Average speed
2. Velocity



Question 4

A Answer the following questions :

1. Cross the odd word, then state the relation among the remaining words :

Nucleic acid / Cytoplasm / Protein / Centromere

2. The following figure show one of the forms of asexual reproduction :

What is the type of living organisms which can do this reproduction ?



3. To whom is this work attributed :

The theory assumed that the solar system was originally a star which was glowing for a short time to become one of the most shining star in the sky then its glowing disappears after day or two days.

4. Name the phase that indicates the following changes during cell division :

Disappearing of nucleolus and the nuclear membrane

B Rewrite the following sentences after correcting their errors :

1. The measuring unit of speed is m^2/sec^2 , while the measuring unit of acceleration is m/sec .
2. In mitosis division the genetic material is duplicating in metaphase and genetic materials is separated in telophase.
3. The image of an object formed in a plane mirror is real, equal the object and inverted.
4. Vegetative reproduction in the plant depends on seeds and fruits.

C What is meant by ... ?

1. The focal length of concave lens equal 5 cm.
2. Acceleration of a moving object equals zero.

7**El-Sharkia Governorate**

Answer the following questions :

Question 1**A** Write the scientific term of each of the following :

1. The length of the shortest straight line between two positions, primary position and final position.
2. It is the line between the centres of curvature of the lens passing by the optical centre of the lens.
3. The law which explains the relation between the angle of incidence and the angle of reflection.
4. The result of multiplying the half speed by doubled of the time.

B Complete the following statements :

1. If an object of 3 cm length was put at a distance of 4 cm from a concave mirror its focal length is 2 cm, so the length of the formed image is
2. In human and animal, meiosis division occurs in to produce male gametes.
3. The ratio between the object length and the formed image length by a concave lens whole one.
4. If the number of chromosomes in a nucleus of a maize pollen grain is 10 chromosomes, then the number of chromosomes in each nucleus of stem cell of the same plant is chromosomes.

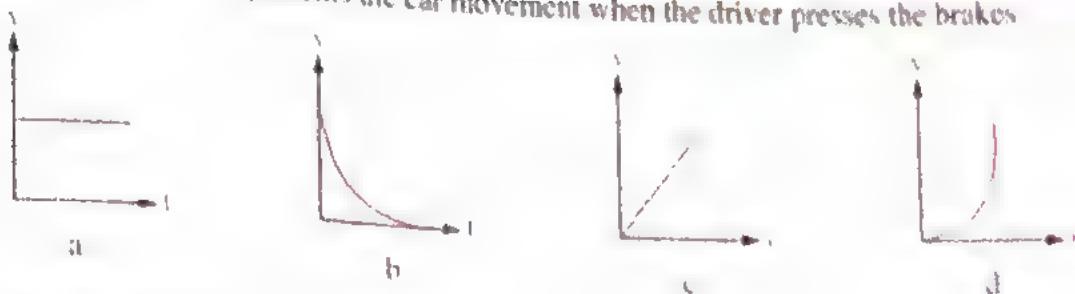
C Calculate the actual speed of the car, whose relative speed is 130 km/h relative to an observer moving in the same direction at a speed of 50 km/h.**Question 2****A** Choose the correct answer :

1. When the initial speed of an object is zero, this means that the object is

a. started its moving from rest.	b. stopped moving.
c. moved with negative acceleration.	d. moved in circular path.
2. The crossing over phenomenon occurs at the end of the

a. metaphase I.	b. prophase I.
c. anaphase I.	d. telophase I.

3. The graph which represents the car movement when the driver presses the brakes



4. Sponges reproduce asexually by

- a. binary fission reproduction.
- b. reproduction by spores.
- c. reproduction by budding.
- d. reproduction by regeneration.

B Correct the underlined words :

1. When putting an object between the focus and the centre of curvature of a concave mirror, the formed image is virtual and equal to the object.
2. Each galaxy has a distinctive shape according to the harmony and the order of the groups of planets in it.
3. The long-sightedness is corrected by using a concave mirror.
4. Earliest life forms began to appear on the Earth after 10000 million years of big bang.

C What is the difference between the speed and velocity
[concerning : definition – kind of the physical quantity]

Question 3

A Put (✓) or (✗) in front of the following statements :

1. The acceleration is the rate of change of distance with speed. ()
2. Nucleolus and nuclear membrane disappear at the end of the telophase of mitosis. ()
3. The metro movement on the trails is an example of the movement in one direction. ()
4. In the interphase, the genetic material in the cell is duplicated. ()

B Choose the correct answer from brackets :

1. If an object is placed at a distance of 12 cm from the optical centre of a convex lens, a magnified, inverted and real image is formed, and when it is placed 14 cm away, a diminished, real and inverted image is formed. The possible focal length of this lens is cm.
 a. 7 b. 6.5 c. 13 d. 14
2. The spindle fibers begin to shrink in
 a. prophase. b. telophase. c. metaphase. d. anaphase.

PART 3

3. If a person puts a pen in his left pocket and looks at the plane mirror, an image of the pen appears at

- a. the left side because it is reversed.
- b. the right side because it is upright.
- c. the right side because it is reversed.
- d. the left side because it is virtual.

4. It contains genetic material from both parents, and when it grows, it gives a new offspring that combines the properties of parents is

- a. gamete.
- b. zygote.
- c. cytoplasm.
- d. chromosome.

C Show by drawing, the formation of an image in the form of light spot by convex lens ? then mention the position of the object ?

Question 4

A Choose the odd word out, then write the relation between the remaining :

1. total distance – acceleration – time – average speed.
2. sun – ten planets – eight planets.
3. mass – length – time – force.
4. Big Bang – nebular theory – the crossing star theory – the modern theory (Fred Hoyle).

B Choose from column (B), what suits it in column (A) :

(A)	(B)
1. The dentist uses it during the checking up.	a. concave mirror.
2. Used in shopping centres that need to high rates security.	b. asexual reproduction.
3. The most common way of reproduction, especially in higher multicellular organisms	c. sexual reproduction.
4. Reproduction method that includes mitosis	d. convex mirror.

C Show by drawing meiosis division and the formation of gametes ?

8 El-Gharbia Governorate

Answer the following questions :

Question 1

A Complete the following statements :

1. Mass is considered from physical quantities.
2. The image that can be received on a screen is called image
3. When an object speed decreases by passing time, then it moves at acceleration

4 The incident light ray which is parallel to the principal axis of a concave mirror reflects passing through

B Put (✓) or (✗) in front of the following sentences :

1. The unicellular protozoans reproduce by binary fission. ()
2. Each lens has one centre of curvature. ()
3. The chromosome consists of two chromatides connected together at centromere. ()
4. When the light ray falls by an angle of zero on the reflecting surface, so the reflected light ray will be perpendicular on the reflecting surface. ()

C A runner covered a distance of 300 meters in 30 seconds, then he returned back walking to the start point in 170 seconds. Calculate the average speed of his complete trip.

Question 2

A Write the scientific term for the following statements :

1. The value of change of an object's speed in one second.
2. Special organs for reproduction in algae and fungi.
3. Change of an object position as time passes according to the position of another object.
4. A biological process, where the living organism produces new individuals of the same kind and thus, ensuring its continuity.

B Choose from column (B) what suits it in column (A), then rewrite the whole sentence :

(A)	(B)
1. The principal axis of the mirror	a. explains that the origin of the solar system is a glowing gaseous rotating sphere.
2. The crossing star theory	b. the straight line that passes by the pole of the mirror and its centre of curvature.
3. The secondary axis of the mirror	c. sees that the origin of the solar system is a star rather than the Sun.
4. The nebular theory	d. the distance between the focus of the mirror and its pole.
	e. the origin of the solar system is the Sun.
	f. the straight line that passes by the centre of curvature of the mirror and any point on its surface except the pole of the mirror.

C Give a reason for :

The moving car with a certain speed seems to be at rest to the moving observer with the same speed and the same direction.

Question 3

A Choose the correct answer :

1. It is possible to produce new plants identical to the mother plant by
 - a. formation of gametes.
 - b. fertilization.
 - c. sexual reproduction.
 - d. tissue culture.
2. If the speed of a car is 72 km/hour, this means that its speed equals m/sec.
 - a. 20
 - b. 40
 - c. 60
 - d. 80
3. The number of chromosomes in the gamete is the number of chromosomes in the parent cell.
 - a. quarter
 - b. half
 - c. equal to
 - d. double
4. The two factors which can be used to describe the motion of a body are the ...
 - a. speed and time.
 - b. area and time.
 - c. distance and time.
 - d. displacement and speed.

B What is the importance of each of the following ?

1. Golden Nano technological molecules.
2. The contact lenses.
3. The anther in the flowering plants.
4. A convex mirror at the left side of the driver of the car.

C Illustrate with drawing the formed image by convex lens, when the body at a distance greater than double the focal length, then mention the properties of the formed image.

Question 4

A Correct the underlined words :

1. The force is the length of the shortest straight line between two positions.
2. The solar system is located in one of the circular arms of the Milky Way galaxy.
3. Pilots take in consideration the uniform speed of the wind.
4. The two gases which produced the galaxies, stars and universe over millions of years are helium and nitrogen.

B What are the results of the following ... ?

1. Absence of centrosome in the animal cell.
2. A light ray passes through the optical centre of the lens.
3. Combination of the male gamete and female gamete.
4. Less convexity of the eye lens surfaces.

C Compare between :

Somatic cells and reproductive cells "in terms of ; its type of the cell division"

9 | Damietta Governorate

Answer the following questions :

Question 1**A Complete the following statements :**

1. The time is considered one of physical quantities.
2. The real image is not formed by using mirror or plane mirror.
3. The vision defect which is due to the decrease of convexity of the eye lens surface is called
4. If the object at rest moves regularly until its speed reaches 12 m/sec. after 3 seconds, so its acceleration equals

B Write the scientific term for each of the following :

1. The distance between the focus of the concave mirror and its pole.
2. A dangerous disease occurs when some of the body cells are divided continuously without controlling.
3. The process of exchange of genes between the two inner chromatids of the tetrad and distributing them randomly in the gametes.
4. A disease that causes a difficulty of vision as a result of the darkness of the eye lens.

C When the following case occur ?

The distance covered by a body equals the amount of displacement happened.

Question 2**A Choose the correct answer :**

1. It is possible to produce new plants identical to the parent plant by

a. formation of gametes.	b. fertilization.
c. budding.	d. tissue culture.
2. The two factors which can be used to describe the motion of a body are the

a. speed and time.	b. distance and time.
c. area and time.	d. displacement and speed.
3. Spindle fibers begin to shrink at

a. prophase.	b. telophase.	c. anaphase.	d. metaphase.
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4. The relative speed of a moving object relative to an observer moves at the same speed in the opposite direction is

a. double.	b. the same.	c. half.	d. quarter.
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B Correct the underlined words :

1. If the angle between the incident ray and the surface of the plane mirror equals 90° , so the angle of reflection equals to 45° .
2. The scientist who established nebular theory is Chamberlain.
3. If a light ray falls passing through the optical centre of the convex lens, it exists passing through the focus.
4. Violent sudden chemical reactions occur in the star resulting in its explosion.

C Rubber ball falls from a height of 8 meters then rebounds from the ground to upward a distance of 4 meters then falls down 4 meters to rest on ground calculate :

1. The distance covered.
2. Displacement.

Question 3

A Correct the underlined words :

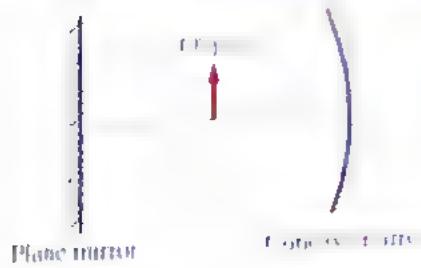
1. When an object moves by relative speed, it covers equal distances in equal periods of time.
2. The bread mould fungus reproduces asexually by budding.
3. The meiotic division in flowering plants occurs in the anther to produce sperms.
4. When the object covers the double of distance at the same time, so its speed decreases to quarter.

B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. The properties of the formed image of an object at a distance greater than the double of the focal length of convex lens are.	a. centrosome.
2. It disappears during the cell division in the prophase and appears once again in the telophase.	b. virtual-erect-magnifying.
3. The properties of the formed image of an object at a distance less than the focal length of convex lens are	c. nuclear membrane.
4. It is responsible for formation of spindle fibers in the animal cell.	d. part of cytoplasm.
	e. real-inverted-diminished.

C In the opposite figure :

An object was in the mid distance between a concave mirror (its focal length is 10 cm) and a plane mirror, so the image was formed by the plane mirror at a distance 30 cm from the plane mirror.



Plane mirror

Concave mirror

1. Draw the path of light rays for the formed image by the concave mirror.
2. Determine the position of the object from the concave mirror.
3. Mention the properties of the formed image by using the plane mirror

Question 4**A Mention the scientific term for each of the following :**

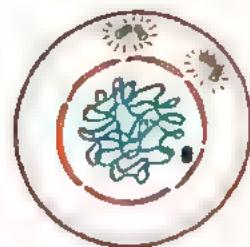
1. The unit that is used to measure the distance between the celestial bodies.
2. The value of change in the object speed in one second.
3. Arrangement, harmony and distinctive shapes of the groups of stars in the universe.
4. The rate of change of the distance.

B Put (✓) or (✗) for the following :

1. The normal vision person sees objects clear at a minimum distance equal 60 cm. ()
2. The number of chromosomes in the human somatic cell is about half of those in gamete. ()
3. The focus of the convex mirror is formed as a result of the intersection of the reflected light rays. ()
4. Sexual reproduction depends on two main processes, they are formation of gametes and fertilization. ()

C From the opposite figure :

1. Write the name of this phase.
2. When does this phase happen ?
3. Why does the cell passes through this phase ?
4. What is the shape of the chromosomes in this phase ?



10 | Kafr El-Sheikh Governorate

Answer the following questions :

Question 1

A Complete the following sentences :

1. The position of the centre of curvature of the convex mirror is the reflecting surface.
2. reproduction occurs in most higher living organisms.
3. When a body starts its movement from rest, its initial speed is
4. The solar system is located in galaxy.

B Correct the underlined words from the followings :

1. The plane mirror is collecting the light rays.
2. Laplace founded the modern theory of the world.
3. Gametes in organisms are formed of cells known as somatic cells.
4. Compass helps us in identifying the speed of the car directly.

C Explain how meiosis is a reduction division.

Question 2

A Choose the correct answer :

1. The phenomenon of exchange of the two inner chromatid pieces of each tetrad is called
 a. anaphase. b. metaphase. c. cross over. d. prophase.
2. Light ray that falls perpendicular on a reflecting surface reflects on itself with an angle
 a. zero. b. 30 c. 60 d. 90
3. All the followings are considered vectors except
 a. force. b. mass. c. weight. d. acceleration
4. There are planets revolving around the Sun.
 a. 7 b. 8 c. 9 d. 10

B Put (✓) or (✗) in the front of the following statements :

1. Fred Hoyle is the founder of crossing star theory. ()
2. Concave mirror is used in producing the telescopes that monitor the space. ()
3. Single-celled living organisms reproduce by binary fission. ()
4. Acceleration is an example of scalars. ()

C An object is placed opposite to a concave mirror at a distance 6 cm. equal the double of its focal length. Determine the position and properties of the image formed by drawing.

Question 3

A What happens when ... ?

1. A body is decelerating.
2. An incident light ray passes through the optical centre of a lens.
3. The movement of galaxies apart.
4. Rupturing the walls of sporangia in the bread mould fungi.

B Explain the importance of the followings :

1. Reproduction.
2. The concave lens.
3. The solar telescope.
4. Velocity of winds on pilot flights.

C A regular speed car covered 80 meters in 4 seconds then decelerated and stopped after 4 seconds. Calculate acceleration value :

1. In the first 80 meters
2. Since beginning deceleration

Question 4

A Write the scientific term for each of the following :

1. Displacement in one second.
2. The planet of life.
3. The point at which the two chromatids are joined together.
4. A vision defect caused due to the formation of an image behind the eye retina.

B Explain how the followings happen :

1. The object moves with a non-uniform speed.
2. Forming of the zygote.
3. Obtaining a virtual (laterally inverted) reversed image.
4. Collecting photos for locations and events took place millions of years ago.

C When division of two cells occur, the first one is of human skin and the other of human ovary. Mention :

1. The type of division in each cell.
2. Number of cells formed after division.

Answer the following questions :

Question 1

A Write the scientific term for each of the following statements :

1. It is the point of connection of the two chromatids of the chromosomes.
2. One of the vision defects that leads to the formation of images behind the eye retina.
3. It is the speed at which the object moves to cover equal distances at unequal periods of times.
4. It is the actual length of the path that a moving object takes from the starting point of the movement to the end point.

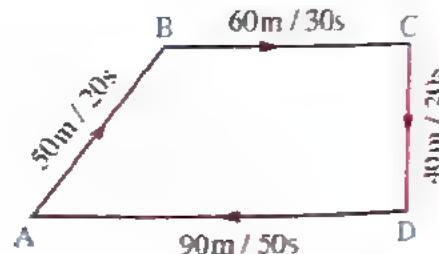
B Correct the underlined words of each of the followings :

1. In the universe, groups of planets are gathered to form galaxies.
2. The incident light ray passing through the focus of the concave mirror reflects back on itself.
3. When the moving object covers the double of distance at the same time, so its speed decreases to half.
4. If the angle between the incident light ray and the reflected light ray on a plane mirror is 50° , so the angle of incidence equals 30° .

C In the opposite figure, if a person moves from point A to the points B, C and D until he reached the starting point.

Calculate :

1. Average velocity.
2. Displacement.
3. The acceleration in the period from (D) to (A), assuming a constant speed of the moving person.



Question 2

A Put (✓) or (✗) in front of the following statements :

1. Contact lenses are placed directly on the cornea of the eye, and can be removed easily. ()
2. The cell prepares for division during interphase by reducing its genetic material. ()
3. When a plane flies in the opposite direction of the wind, its velocity decreases, and therefore the amount of the fuel consumed decreases. ()
4. During the anaphase of mitosis cell division, the centromere of each chromosome splits lengthwise into two halves. ()

B Complete the following sentences :

1. The Sun takes about 220 million years to complete one rotation around the centre of
2. The telescope was launched in April 1990 and it rotates around the Earth at a height of 500 km.
3. When an object with 15 cm. length is placed at a distance 6 cm. from a concave mirror its focal length is 3 cm., therefore the length of the formed image is cm.
4. If the number of chromosomes in the pollen grain of a plant is 8 chromosomes, then the number of chromosomes in the leaf cell of this plant is

C The opposite figure shows the formation of a cancerous tumor of the cells of an organ of a living organism,

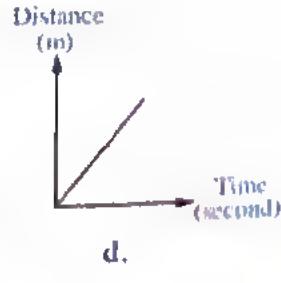
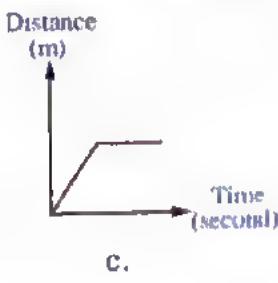
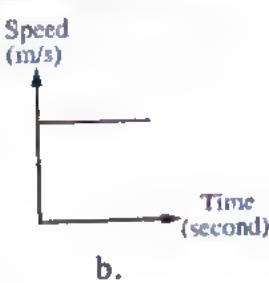
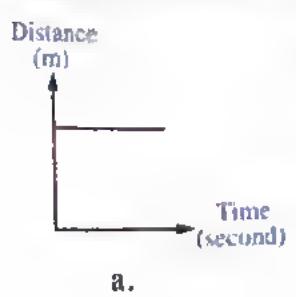
Answer the following :

1. What is the reason of cancerous tumor ?
2. Mention one of the ways to treat a cancerous tumor.



Question 3

A Choose the correct answer :



B Extract the odd word or sentence, and then write what connects the rest of the words :

1. Paramecium – yeast – human – bread mould.
2. Liver cells – pancreas cells – stomach cells – testis cells.
3. The occurrence of the crossing over phenomenon – condensation of the chromatin reticulum – shrinking of the spindle fibers – disappearance of the nuclear membrane.
4. It is used in the telescope – it is used at barber shop – it is used in the microscope – it is used in medical glasses.

C A car moved at 15 m/sec, and when the driver applied the brakes to reduce the speed, the speed decreased to 10 m/sec within 2 seconds. Calculate the required time to stop the car from the moment of pressing the brakes, if the car is moving with uniform acceleration.

Question 4

A Choose from column (A) what suits from column (B) and (C) :

N	(A)	(B)	(C)
1	Force is a physical quantity	a. It diverges the rays that fall on it.	w. It can form a virtual upright magnified image of the object.
2	Concave lens	b. It is enough to determine it, only knowing its amount.	k. It can be received on the screen.
3	Real image	c. It collects the rays that fall on it.	i. Its measuring unit is joule.
4	Concave mirror	d. To determine it, it is necessary to know its magnitude and direction.	m. Always form a virtual upright diminished image of the object.
		h. Always be inverted.	n. Its measuring unit is Newton.

1.

2.

3.

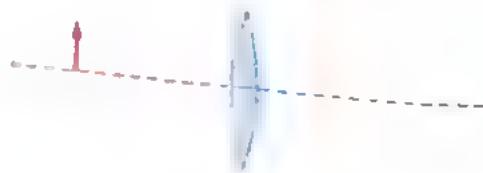
4.

B Write the number that indicates each of the following :

1. The number of cells resulting from the division of a somatic cell three successive times.
2. The speed of a car covering a distance of 1200 meters in a half minute.
3. The relative speed of an observer moving in the same direction with the same speed of the object.
4. The distance between a person and his image in a plane mirror, when he stands at a distance of 2 meters from it.

C The opposite figure shows a convex lens with a focal length equal 3 cm. If an object is placed at a distance of 5 cm. from the lens.

determine the position of the formed image by drawing only two light rays, and then mention the properties of the formed image.



Answer the following questions :

Question 1

A Complete the following sentences :

1. The acceleration of an object is , if its speed increases as time passes.
2. Spherical mirror has one axis.
3. The distance covered at a certain direction is and it is a vector physical quantity.
4. The image can be received on a screen.

B Rewrite the following statements after correcting the underlined words :

1. If an object is placed at a distance 40 cm from a convex lens its focal length is 20 cm.. . the image is formed at a distance 10 cm.
2. If a nucleus of a plant pollen grain contains 10 chromosomes so, the nucleus of its leaves contains 5 pairs of chromosomes.
3. **In the opposite figure :**
The angle of reflection is 180° .
4. The offspring resulted from vegetative reproduction have a new genetic traits that combine the parents' genetic traits.



C Give reasons for :

1. Cars are provided with speedometer.
2. The amount of consumed fuel by a plane flies between two cities differs according to the wind direction.

Question 2

A Write the scientific term :

1. The speed of the moving object relative to a static or a moving observer.
2. Thread like bodies present in cells' nuclei and they represent the genetic material of the living organisms.
3. The displacement covered in one second.
4. A process in which genes exchange between the two inner chromatids of the tetrad.

B Choose the correct answer.

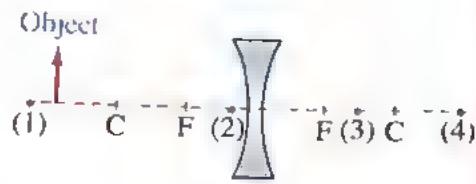
Ques. 1. The object is placed in front of concave lens, so the image will be formed in the position
 a. I b. 2 c. 3 d. 4

Ques. 2. The normal person can see objects clearly in the range from to 6 meters.
 a. 25 m b. 25 cm c. 6 cm d. 10 cm

Ques. 3. The continuous expansion of the universe due to as time passes.
 a. separation of galaxies b. approaching of galaxies
 c. stability of galaxies d. slow of galaxies motion

Ques. 4. During developing the Nebular theory, Laplace has been affected by the shape of planet in space.
 a. Earth b. Mercury c. Saturn d. Mars



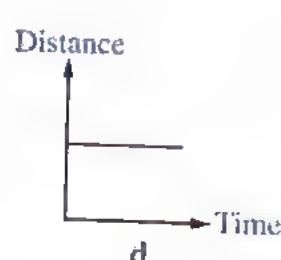
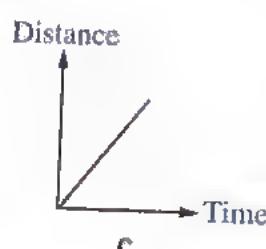
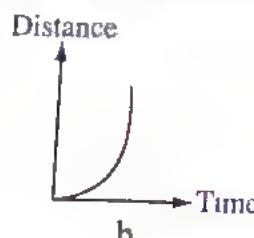
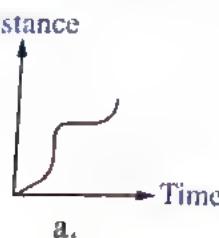


C A bike moves from the rest and its speed reaches 5 m/sec. in 2.5 sec. while the speed of a car increases from 20 m/sec. to 45 m/sec. at the same time. Which of them moved at a greater acceleration ?

Question 3

A Choose the odd word or the odd figure out, then connect between the other :

1. Mass – length – force – time.
2. Yeast fungus – hydra – euglena – sponge



4. Sperms – ova – pollen grains – liver cells

B Choose from column (B), what suits it in column (A) :

(A)	(B)
1. Centromere	a. the centre of sphere that the mirror is part of it.
2. Pole of the mirror	b. the point inside the lens that lies on the principal axis.
3. Centrosome	c. responsible for formation of spindle fibers.
4. The optical centre	d. the point that lies in the middle of the reflecting surface of the mirror.
	e. the point of connection of the chromatids.

C Determine the type of the optical piece (lens or mirror) then mention its type (convex – concave – plane) when it is able to :

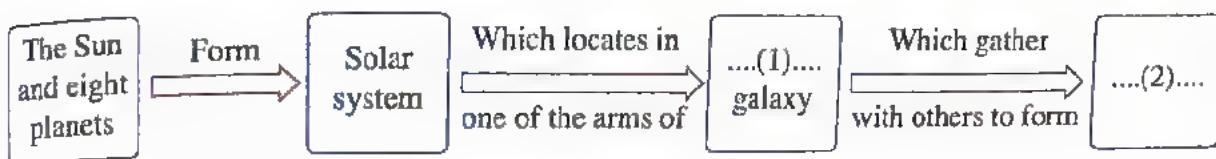
1. From a virtual upright image equal to the object in size.
2. From a virtual upright enlarged image on the other side of the optical piece.

Question 4

A Complete the missing parts in :

1. The following table :
2. The following diagram :

Speed (meter / second)	Distance (meter)	Time (second)
..... a	100	2
10	..... b	20

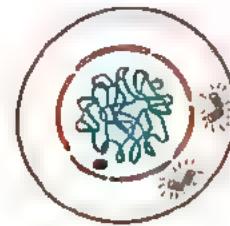


B Compare between each of the following :

1. Convex lens and concave lens (concerning the type of principal focus).
2. Short sightedness and long sightedness (concerning the position of the formed image related to the retina).
3. Gamete and zygote (concerning the number of chromosomes)
4. Meiosis division and mitosis division (concerning number of resulting cells).

C From the opposite figure :

1. What is the name of this phase ?
2. Why does the cell pass by this phase ?



13 Suez Governorate

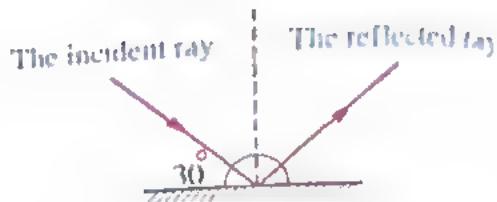
Answer the following questions :

Question 1

A Choose the correct answer :

1. is from the scalar physical quantities.
a. Mass b. Force c. Acceleration d. Displacement
2. A car speed of 120 km/h is a car speed of 40 m/s.
a. equal to b. less than c. greater than d. twice
3. If the number of chromosomes in a liver cell of a certain living organism is 32 chromosomes, then the number of chromosomes in a male gamete is chromosomes.
a. 64 b. 46 c. 32 d. 16

4. A light ray falls on a plane mirror, as in the figure it reflects where the angle of reflection equals
 a. 60° b. 90°
 c. 30° d. 120°



B Give one example for each of the following :

1. A light piece that always gives virtual, reversed and equal image for an object.
2. A lens which is used to correct long-sightedness.
3. A living organism reproduces asexually by spores (sporangia).
4. A type of asexual reproduction that takes place in plants without needing seeds.

C A racer covered 30 meters northward within 10 seconds then 60 meters eastward within 20 seconds then 30 meters southward within 10 seconds and then returns back to the start point within 20 seconds

1. What is the average speed of the racer ?
2. What is the velocity of that racer ?

Question 2

A Complete the following sentences :

1. If an object starts its movement from rest, it means that its initial speed equals
2. Our solar system is located in one of the arms of the Milky Way galaxy.
3. At the end of , the nucleolus and the nuclear membrane disappear at the mitosis.
4. The chromosome consists of two connected threads at the

B Compare between the following :

1. Real image and virtual image. (according to the possibility of receiving them on screen)
2. Acceleration and deceleration. (according to the definition)

C When do the following happen ... ?

1. The distance is equal to the amount of displacement.
2. The incident light ray falls on a spherical mirror reflects back on itself.

Question 3

A Write the scientific term for each of the following statements :

1. The speed of a moving object relative to a standing or a moving observer.
2. A flat gaseous round disk that formed the solar system according to Laplace assumptions.
3. Cellular division which leads to the formation of gametes.
4. A phase in which a series of adverse changes occur, ends with forming two cells, each cell has the same number of chromosomes of the mother cell.

B Give reasons for the following :

1. The body that moves by constant uniform speed has acceleration equals zero.
2. Short-sighted person sees the far objects distorted.
3. No image is formed when the object is placed at the focus of a convex lens.
4. The mitotic division is important for children.

C An object was placed at a distance of 8 cm from the optical centre of a lens then a real diminished image was formed for the object, and when the object was moved 4 cm. towards the lens a real equal image was formed for the object.

1. Calculate the focal length of the lens.
2. Draw the path of the rays that formed the image when the object was at a distance of 4 cm from the optical centre of the lens.

Question 4**A Correct the underlined words from the followings :**

1. A plane mirror is placed at the right and the left sides of the car's driver.
2. When the light ray falls by an angle of 30° on the reflecting surface, so the reflected ray will be perpendicular on the reflecting surface.
3. The theory that explained the origin of the universe is the modern theory
4. The universe emerged from the particles of Oxygen and Nitrogen.

B Look at the opposite figure then answer :

1. What is the name of this phenomenon in front of you ?
2. What is the importance of its occurrence ?

**C Choose from column (B), what suits it in column (A) then rewrite the whole sentence :**

(A)	(B)
1. Spindle fibers	a. is a point inside the lens lies on the principal axis in the mid distance between its two faces.
2. Motion	b. carries the genetic information of the living organism.
3. The optical centre of the lens	c. is the point of collection of the parallel light rays after refraction from the lens.
4. Nuclear acid	d. is the change of an object's position as time passes according to the position of another fixed object.
	e. is a network of filamentous fibres extend between the two poles of the cell through the cell division.

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Answer the following questions :

Question 1**A Complete the following sentences :**

1. Force is considered a physical quantity, and mass is considered a physical quantity.
2. If the object's velocity decreases with time, the acceleration is called and is measured in
3. A virtual, magnified and erect image can be obtained by mirror or lens.
4. The secondary axis of the spherical mirror is any straight line passing by and any point on its surface except of the mirror.

B Choose the odd word (or statement) out and write the relation between rest statements or words :

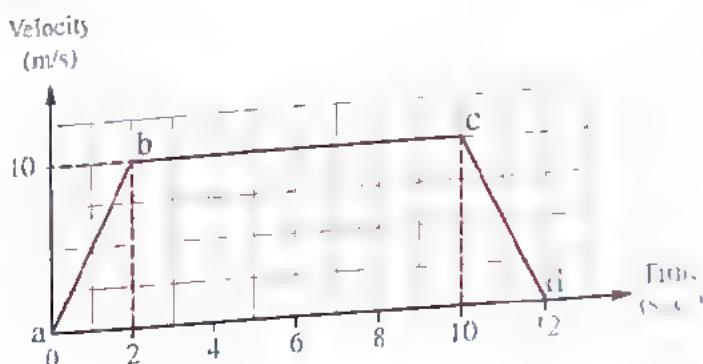
1. production of ova – compensation of damaged cells – production of cells identical to the parents – growth of the living organisms.
2. pollen grains – ova – sperms – anther.
3. Real inverted diminished image – Real inverted image equal to the object – Real inverted magnified image – Virtual erect image equal to the object.
4. plane mirror – convex mirror – concave mirror – convex lens.

C Through 2.5 second the velocity of a car increases from 20 m/s to 25 m/s, while a bicycle starts its motion from rest and its velocity reaches to 5 m/s in the same period of time, which of them (car or bicycle) gain larger acceleration.**Question 2****A Write the scientific term :**

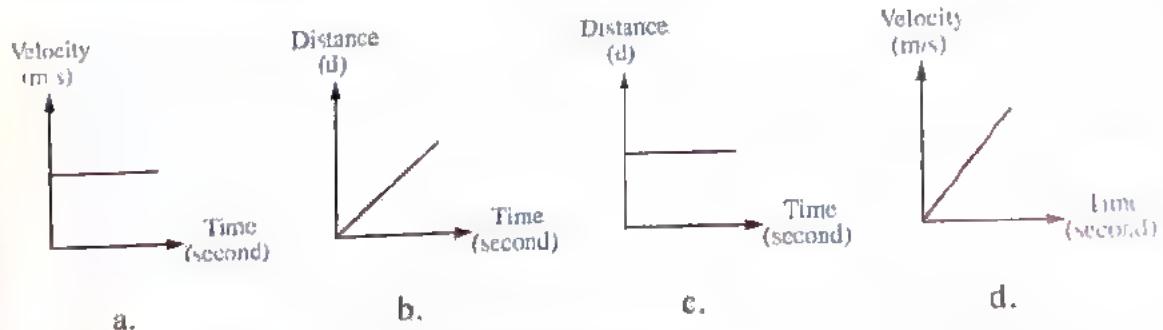
1. The displacement per unit time.
2. A group of four chromatids formed when two chromosomes are arranged in homologous pairs in the meiotic division.
3. A mathematical method used by physicists to predict the relation between certain physical quantities.
4. A type of asexual reproduction that occurs in simple algae and bacteria.

B Correct the underlined words from the followings :

1. The focal length of the thin lens equals to the focal length of the thick lens.
2. Contact lenses are placed directly on the retina of the eye to correct sight defects.
3. Astronomical telescope refracts sun rays downward to a mirror in a tunnel under the Earth's surface.
4. Andromeda galaxy took its disc shape form after 5000 million years of the Big Bang.

C The opposite figure represents the motion of an object, what is the time period through which the acceleration = 0**Question 3****A** Choose the correct answer :

1. When an object completes one revolution of a circular path of diameter 10 meter, its displacement is meter.
a. 10 b. 5 c. 31.4 d. 0
2. contains genetic material from both parents and when it grows it gives a new offspring.
a. Gamete b. Zygote c. Cytoplasm d. Chromosome
3. Which of the following graphs represent motion with uniform acceleration.



4. Spindle fibers appear in during cell division.
a. prophase b. metaphase c. anaphase d. telephone

B Choose from column (B) what is suitable for column (A) :

(A)	(B)
1. The virtual focus of the lens	a. formed in front of the reflecting surface.
2. The real image of the mirror	b. at the end of prophase.
3. Disappearing of the nuclear membrane and nucleolus	c. in anaphase.
4. Centromere of each chromosome splits lengthwise	d. formed from intersection of extensions of refracted light rays.
	e. in metaphase.
	f. formed behind the reflecting surface.

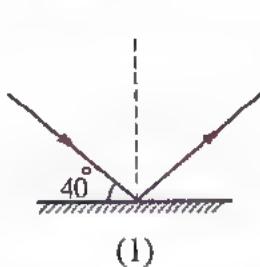
C Mention the position and characteristics of the image formed by a convex lens for an object placed at a distance larger than its focal length and less than double its focal length, explain your answer with drawing.

Question 4

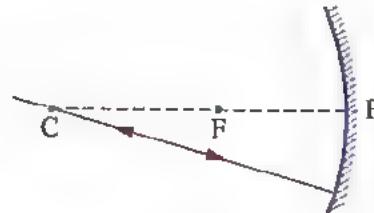
A Put (✓) or (✗), then correct the wrong ones :

1. The relative speed is the speed of an object relative to a static or moving observer. ()
2. The scientist Moulton published a research entitled "world order". ()
3. Most of the information of astronomers about the Sun came from the study of its shape. ()
4. If a car covers a distance of 500 m in 25 sec. with uniform speed, its speed will be 20 m/s. ()

B 1. Calculate the magnitude of an angle of reflection in each of the following figures.



(1)

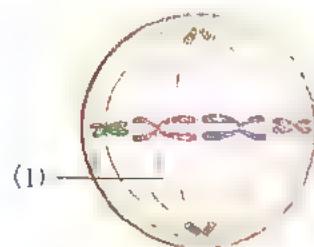


(2)

2. The opposite figure represents one phase of mitotic division.

(1) Write label 1.

(2) Mention the name of this phase ?



C Explain the relation between : The genetic structure of the offspring and parent in asexual and sexual reproduction.

15 El-Fayoum Governorate

Answer the following questions :

Question 1**A Complete the following sentences :**

1. The two factors necessary for the movement description are and
2. Displacement from physical quantities and is measured by
3. Focal length of concave mirror equals the distance between and
4. lens collects the light rays and lens diverges the light rays.

B write the scientific term of each of the following :

1. The point that is in the middle of the reflecting surface of the spherical mirror.
2. The centre of the sphere where the lens's face is a part of it.
3. The process through the inner chromatids of tetrad are exchanged during meiotic division.
4. The ability of some animals to compensate their missing parts.

C A train moves with uniform speed (regular speed) equals 90 km/h. Calculate the distance which was covered by this train during 20 seconds.**Question 2****A Choose the correct answer :**

1. When the body covers equal distances in unequal periods of time, this means that this body moves by

a. uniform speed.	b. positive acceleration.
c. irregular speed.	d. deceleration.
2. The ratio between final speed and initial speed for an object moves by positive acceleration is

a. less than one.	b. more than one.	c. equals one.	d. equals zero.
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3. The region of connection between the two chromatids in the chromosome is

a. centromere.	b. centrosome.	c. spindle fibers.	d. cytoplasm.
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4. Chromosomes are found in ...

a. mitochondria.	b. endoplasmic reticulum.
c. green plastids.	d. nucleus.

PART **3**

B Write the number which refers to :

1. The length of image which is formed to an object its length 4 cm at distance equals the double of focal length of concave mirror.
2. The radius of spherical mirror its focal length equals 5 cm.
3. The number of galaxies in the universe.
4. The ratio of helium gas in the universe within minutes of Big Bang.

C On recording the results of an experiment in which an object moves, the results were as the table :

1. Draw the graphic representation of this relation.
2. Calculate the speed of this object.

Distance (m)	10	20	30	40	50
Time (sec)	4	8	12	16	20

Question 3

A Correct the underlined words :

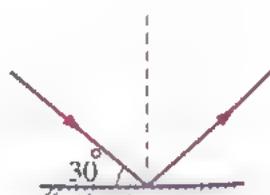
1. Average speed is the speed of moving object relative to the observer.
2. When the object covers double of the distance during the same time the speed will decrease to quarter.
3. Meiotic division occurs in somatic cells.
4. Amoeba reproduces asexually by budding.

B Put (✓) or (✗) in front of the following statement :

1. The image which is formed by plane mirror is real image. ()
2. A concave mirrors are placed at right and left sides of car driver. ()
3. The cells resulted from meiotic division contain half the genetic material of the parent cell. ()
4. The offspring resulted from asexual reproduction have new genetic traits different from their parents. ()

C from this figure :

Find the angle between the incident and reflected light ray.



Question 4

A Select from the (second) column which suitable form (first) column then rewrite the complete sentences :

First column	Second column
1. The distance moved through a unit time	a. the universe.
2. Its measuring unit m/s^2	b. speed.
3. A wide space that contains galaxies	c. displacement.
4. It contains the Sun and solar system	d. acceleration.
	e. Milky Way galaxy.

B Odd the unsuitable word (or sentence) :

1. Plane mirror – convex mirror – concave mirror – convex lens.
2. Long-sightedness – short sightedness – contact lenses – cancer.
3. Skin cell – liver cell – gamete cell – kidney cell.
4. Yeast – hydra – euglena – sponge.

C Give a reason for :

Before starting division, the cell passes through interphase.

16 Beni-Suef

Answer the following questions :

Question 1

A Complete the following sentences :

1. is a disease leads to formation of the image behind the retina.
2. The incident light ray with an angle 40° on a plane mirror it reflected at ...
3. When object covers equal distances in equal periods of time, it moves with ...
4. When two cars moves in opposite direction with speed 100 km/h for each car the speed of the second car as estimated by the driver of the first car = ...

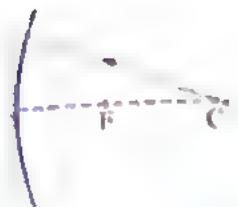


B Study the following figures and choose the correct answer :

1. The phase in the following figure represents
 - a. metaphase.
 - b. first metaphase.
 - c. prophase.
 - d. first anaphase.

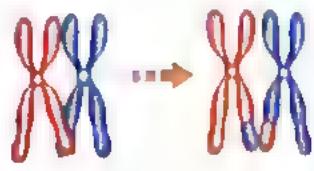
2. In the following figure the incident light ray

- reflected parallel to principal axis.
- refracted in the focus.
- pass without refraction.
- reflected on itself.



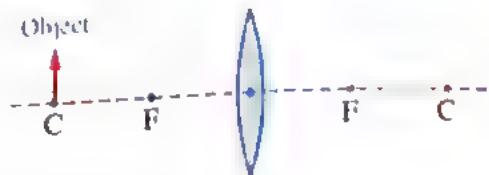
3. This phenomenon in the following figure takes place at the end of

- anaphase.
- telophase.
- first prophase.
- first metaphase.



4. The properties of formed image to the object is placed in front of convex lens as in the following figure

- virtual upright and equal.
- real inverted and equal.
- real inverted and enlarged.
- virtual erect and enlarged.



C Calculate the value of acceleration when the object speed changes from 6 m/sec to 12 m/sec through 3 sec.

Question 2

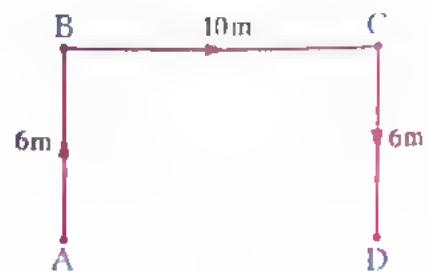
A Correct the underlined words :

- Nucleolus disappear during mitotic division in telophase.
- The chromosome composed of two chromatid connected together at centrosome.
- Vector physical quantity is a physical quantity to determine it by magnitude and direction.
- If a body moves in a circular path and completes half of its rotation its displacement is equal zero.

B Mention one example for each of the following :

- The biggest star that can be seen on the Earth.
- Astronomical phenomena in which modern theory established.
- An optical piece that forms reversed image to the object.
- An optical piece placed at the left side of the driver.

C In the following figure for object path from point (A) to the point (D) passing through points (B) and (C) through 10 sec find the value of velocity.



Question 3

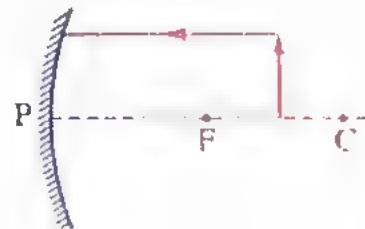
A Write the scientific term :

1. A theory that explains the origin of universe since 15000 million years.
2. Group of stars that rotates together in cosmic space by the effect of gravity.
3. The actual length of the path that a moving object covers from starting point to the ending point.
4. The change of object speed (increases or decreases) by equal values in equal periods of time.

B Answer the following questions as required in each question :

1. Reproduction by spores is one of the most common forms of asexual reproduction in fungi. (right or wrong).
2. As the convexity of lens face is small so its focal length (4 - 6 - 8 - 10) cm. (choose the correct answer)
3. If the chromosomal number in the liver cell is 42 chromosome so the number of chromosomes in the reproductive cell (complete).
4. Distance between the object and its image half the distance between the object and plane mirror (correct the underlined word).

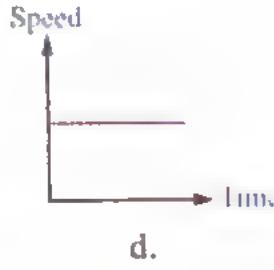
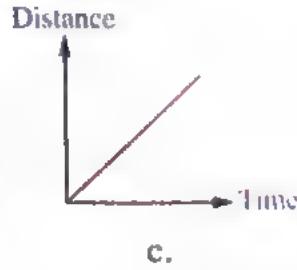
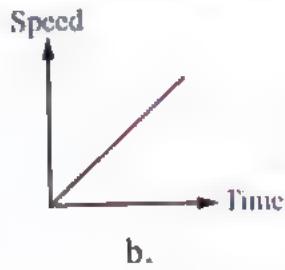
C An object is placed in front of concave mirror as in the following figure. (Transfer the drawing to your answer sheet) then complete the path of incident rays. And mention the properties of the formed image.



Question 4

A Choose the correct answer :

1. Number of planets that revolves around the Sun
a. six. b. seven. c. eight. d. ten
2. An object moves with speed 36 km/h that means it moves with speed m/sec
a. 10 b. 15 c. 20 d. 25
3. The founder of modern theory for origination of solar system
a. Moulton. b. Laplace. c. Fred Hoyle. d. Chamberlain.
4. The graph that represents object at rest is shape
a. b. c. d.



B Put (✓) or (✗) in front of the following statements :

1. Circular motion is the simplest type of motion. ()
2. Fertilization is a combination between male gametes and female gametes to form a zygote. ()
3. The sperm contains half of the genetic material contained in the skin cell of the same organism. ()
4. Average speed is a total distance that covered by moving body multiplied by the total time required to cover this distance. ()

C What would happens in the following cases ... ?

1. An amoeba cell divided into three successive mitotic divisions.
2. The bud in the yeast fungus is remain connected to the parent cell.

17**El-Minia Governorate**

Answer the following questions :

Question 1**A** Write the Scientific term of each of the following :

1. The speed of the moving object relative to the observer.
2. The object's speed changes (increases or decreases) by equal values through periods of time.
3. It is a mirror that its reflecting surface is a part of a hollow sphere.
4. A disease infects the eye lens to become opaque.

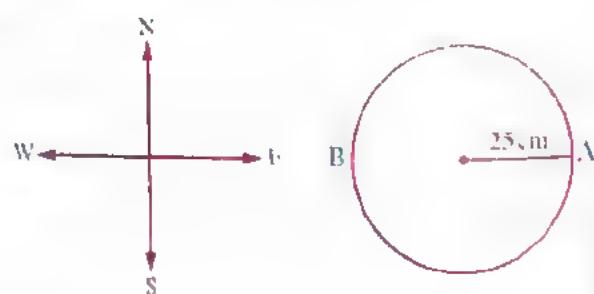
B Correct what is underlined in the statement :

1. Both of convex lens and plane mirror collect the light rays falling on them
2. If an object is put at a distance 10 cm from a concave mirror its focal length 7 cm an image is formed for the object at distance 7 cm from the mirror.
3. Gene is the region of connecting two chromatids inside the chromosome.
4. Crossing over phenomenon occurs at telophase of first meiotic division.

C The following figure represents the movement

of an object from point (A) on circumference
of a circuit its radius 25 cm. Calculate the
displacement of the object when it moves:

1. Half cycle (until it reaches to point B).
2. Complete cycle (until it reaches to point A).



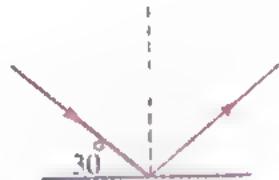
Question 2**A Complete the following statements by the suitable word :**

(distance - speedometer - prophase - tissues culturing - regeneration)

1. The spindle fibres are formed in
2. The multiplication of the speed of moving object times the time equal
3. It is possible to produce new plants very similar to the parent plant by
4. The speed of the car can be identified directly by using

B Choose the right answer :

1. The equipment used by astronomers to study the spectrum of the sun is
 - a. hubble telescope.
 - b. contact lenses.
 - c. solar telescope.
 - d. binoculars.
2. Scientists believe that the universe emerged from ball of high pressure and high temperature.
 - a. solid
 - b. liquid
 - c. gaseous
 - d. non of the previous
3. If an incident light ray falls parallel to the principal axis of concave mirror, it reflects
 - a. passing through centre.
 - b. passing through the focus.
 - c. on itself.
 - d. refract.
4. Light ray falls on a plane mirror as shown in the figure
so it reflects and angle of reflection equals
 - a. 30°
 - b. 60°
 - c. 90°

**C A train starts its trip, its length 200 km at 6 o'clock in the morning, the speed of the train was 40 km/h when does the train reach to the end of the trip ?****Question 3****A Put (✓) or (✗) in front of the following statements :**

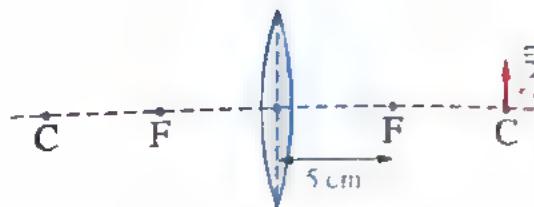
1. The displacement and velocity are similar in the direction and differ in the unit of measurement. ()
2. Unit of measuring acceleration is considered from scalar quantity. ()
3. The offspring resulting from sexual reproduction keep the genetic structures of living organisms. ()
4. In the mitosis two new separated cells are formed each cell has half the number of the genetic material of the mother cell. ()

B Give reasons for :

1. The lens has two focus, while spherical mirror has one focus.
2. The concave mirrors are used in hair dresser's shop.
3. Mitosis is important for child body.
4. Interphase comes before cell division.

C Translate the figure to your notebook answer then answer the following :

1. Complete the pathway of the rays forming an image to the object.
2. **Complete :**
 - a. Length of image cm
 - b. The image is formed at distance cm from centre of curvature of lens.

**Question 4****A What are the results for the following :**

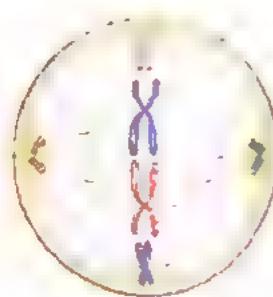
1. If the object covers the same distance in half the time according to its speed.
2. The plane flying in the opposite direction of the wind according to the time of the trip and amount of fuel.
3. According to Laplace assumptions, the nebula lost its heat.
4. The atomic particles merged together within minutes after the Big Bang.

B Choose from coulomb (B) what is suitable from coulomb (A) :

(A)	(B)
1. If yeast fungus is put in warm sugary solution	a. by concave lenses.
2. Some living organisms like starfish	b. it reproduce asexually by budding
3. Correcting short-sightedness	c. reproduce by regeneration
4. Correcting long-sightedness	d. reproduce by sporogony.
	e. by convex lenses.

C The following figure represents one of the phases of the division for a cell of animal body.

1. What is the kind of division to which this phase is related ?
2. What is the name of this phase ?
3. What are the changes happened in this phase ?



18 Assiut Governorate

Answer the following questions :

Question 1

A Choose the correct answer :

1. From the vector physical quantities, is
 - a. mass.
 - b. displacement.
 - c. length.
 - d. time.

2. is placed to the right and left of the car's driver to form an erect and minimized image for the way behind the car.
 - a. Concave mirror
 - b. Concave lens
 - c. Convex mirror
 - d. Convex lens

3. If a car and a bike are moving from the same position and in the same direction, the speed of the car is 50 m/sec. and the speed of the bike is 10 m/sec. after 4 seconds. The distance between them becomes metre.
 - a. 100
 - b. 160
 - c. 200
 - d. 240

4. A concave mirror whose radius of curvature is 50 cm, an object is placed at distance that equals cm to form a virtual, erect and magnified image for the object.
 - a. 12
 - b. 25
 - c. 35
 - d. 50

B correct the underline words :

1. Contact lenses are put on the eye pupil and can be easily removed.
2. The spindle fibers are formed in the plant cell from the centrosome.
3. The chromosome chemically consists of DNA and lipids.
4. Plane mirror converges the light rays.

D In the opposite figure : two cars moved at the same time from point (A) to (D) the first car took the pass (ABCD) in 20 sec. and the second car took the pass (AD) with velocity 20 m/sec.

1. Which of the two cars reach first to point (D) ? why ?

Calculate the velocity of the first car.



Question 2

A Choose from coulomb (B) what is suitable from coulomb (A) :

(B)	(A)
1. The spindle fibers shrink	a. the change of an object position as time passes according to the position of another fixed object.
2. Motion	b. anaphase.
3. Bread mould fungus reproduces by	c. the value of change of an object's speed in one second.
4. The scalar physical quantity	d. sporogony (spore propagation).
	e. it is enough to identify its magnitude only.
	f. budding.
	g. telophase.

B Check (✓) in front of the right statements and (✗) in front of the false statements :

1. The real image is the image that can be formed on a screen. (✓)
2. The crossing star is the largest star that can be seen from the surface of the Earth. (✗)
3. The lens is a transparent medium that reflects the light and is defined with two spherical surfaces. (✗)
4. Sudden violent chemical reactions occur with in the star which led to its explosion. (✓)

C What is meant by ... ?

The relative speed of car relative to a moving observer equals zero.

Question 3

A Complete the following statement :

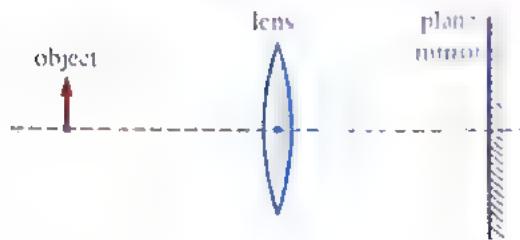
1. A short sighted person sees the far objects distorted as their image formed
2. occurs in the somatic cells of organisms. It leads to the growth of the organisms.
3. We can identify the car speed directly by
4. Hydra reproduces asexually by

B Write the scientific term for each of the following :

1. A phase in which the chromosomes migrate towards the cell equator.
2. A straight line that passes through the centre of curvature of a mirror and its pole.
3. The combination of the male gamete and the female gamete to form a zygote.
4. A mirror whose reflecting surface is a part of the inner surface of a sphere.

C In the opposite figure :

An object is placed in front of a convex lens and put on the other side a plane mirror, when we look in the mirror, we find that no image is formed for the object :

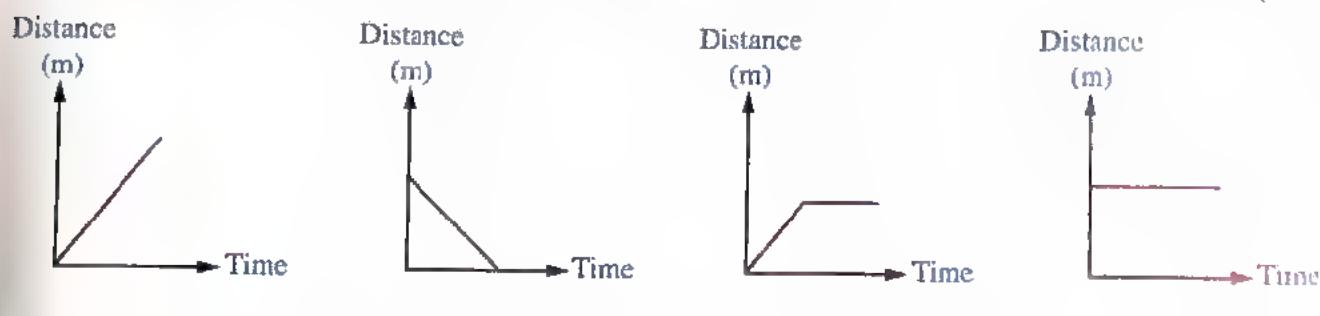
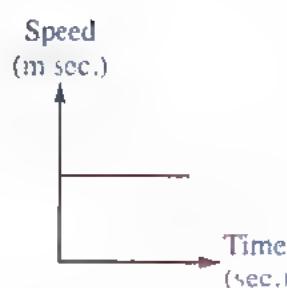


1. Mention the position of the object from the lens.
2. Why no image is formed for the object inside the mirror ?

Question 4

A Complete with one of the answers given :

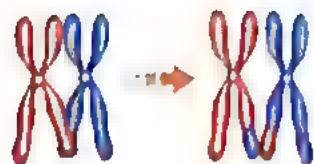
1. The opposite graph represents the relation (speed - time) of a moving object, which of the following graphs represents the relation (distance - time) of the same moving object



- a. b. c. d.

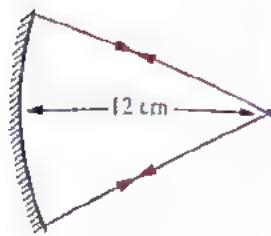
2. According to Laplace theory the solar system was a glowing gaseous sphere revolving around itself. This sphere is called
 - a. sun.
 - b. planets.
 - c. stars.
 - d. nebula.
3. When a car moves by positive uniform acceleration of (10 m/sec^2) this means . . .
 - a. the car covers 10 metres each second.
 - b. the car speed increases by the rate of (10 m/sec) every second.
 - c. the car speed decreases by the rate of (10 m/sec) every second.
 - d. the car acceleration increases by the rate of (10 m/sec^2) every second.
4. Within minutes from the Big Bang, the ratio of hydrogen was
 - a. 25%
 - b. 50%
 - c. 75%
 - d. 100%

B Look at the following figures then Mention :



1. This phenomenon is called
 - The phase in which that phenomenon occurs
 - The type of its division

2. • Radius of curvature =
 - Focal length =



C Give reasons for :

1. Asexual reproduction maintains the genetic structure of the living organisms.
2. Meiotic division is called reduction division.

19

Sohag Governorate

Answer the following questions :

Question 1

A Complete the following sentences :

1. is the distance moved through a unit time.
2. the point in the middle of the reflecting surface of concave mirror.
3. is the quantity that is characterized by the magnitude only.
4. The vision defect which is due to a shortness in the radius of the eye ball is

B Choose from coulomb (B) what is suitable from coulomb (A) :

(A)	(B)
1. The principal axis of refracting object	a. a cell division occurs in the somatic cells of living organisms it leads to the growth of the living organisms.
2. Mitotic division	b. occurs in yeast fungus.
3. The principal axis of reflecting object	c. it is the straight line that passes by the pole of the mirror and its centre of curvature.
4. Budding	d. a cell division leads to from gametes.
	e. it is a straight line passing by the focus and the optical centre.
	f. occurs in starfish.

C An object covered 30 meters northward within 30 seconds then 60 meters eastward within 20 seconds and then 30 meters southward within 10 seconds.

Find : a. Speed. b. Velocity.

Question 2

A Write the scientific term for each of the following :

1. The value of an object's speed relative to the observer.
2. It contributes in genes exchanging between the two homologous chromosome's chromatids and distributing them randomly in the gametes.
3. Shortest path between the start position and the end position.
4. The reproduction that occurs without needing seeds.

B Choose the correct answer :

1. Galaxies began to form after million years after the Big Bang.
a. 15000 b. 5000 c. 3000
2. The image formed by the concave lens is
a. real, inverted and magnified. b. virtual, upright and diminished.
c. virtual, inverted and diminished.
3. The founder of nebular theory
a. Chamberlain and Moulton. b. Fred Hoyle. c. Laplace.
4. The incident light ray parallel to the principal axis of the mirror reflects
a. on itself. b. passing through focus.
c. passing through pole.

C On a straight line there is a car moves by 90 m/s then the brakes applied, the car stops after 10 seconds.

- a. Calculate the acceleration.
- b. Mention the type of acceleration.

Question 3

A Correct the underline words :

1. The non-uniform speed is the motion of an object when its speed changes by equal values in equal periods of time.
2. The chemical acid carries the genetic information of the organism.
3. A moving car covers 100 meter per minute, so its speed 100 m/sec.
4. Chromatin reticulum condenses and appears in the form of long, thin and double strings (chromosomes) in the telophase.

B Put the following words in the right space in the following statement :

(first meiotic division – virtual – real – 20 – 40 – second meiotic division)

1. aims to increase the number of produced cells.
2. A convex mirror, its focal length 20 cm its radius of curvature =
3. A somatic cell contains 20 chromosomes as the reproductive cell contains chromosomes.
4. The image that can be formed on a screen is called

C A lens thick at middle and thin at tips, its focal length 4 cm an object is placed at 6 cm in front of the lens.

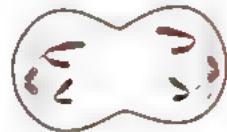
- a. Determine the position of the formed image by drawing two light rays only.
- b. Mention the properties of formed image.

Question 4:

C Put (✓) or (✗) in front of the following statement :

1. The universe was formed due to merged the particles of oxygen and nitrogen. ()
2. The (speed - time) graph for regular motion at uniform speed is represented by a straight line parallel to the time axis. ()
3. The compass helps us in identifying the speed of the car directly. ()
4. Universe full of many galaxies which move away from each other. ()

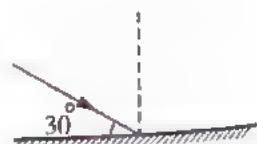
B (1) The following figure is for one of the phases of cell division, answer the following questions :



- a. The name of the phase is
(telophase I - anaphase II - metaphase)

- b. The number of chromosomes at the end of cell division in each cell pole is the number of the chromosome in the parent cell
(half - equal - double)

(2) A light ray falls on a plane mirror as in the opposite figure :



- a. The sum of the angle of incidence and angle of reflection
(90° - 120° - 60°)
- b. The image properties formed by plane mirror is
(upright - real - all the previous answers)

C Compare between the Sexual reproduction and Asexual reproduction in terms of genetic traits of resulted offspring.

Answer the following questions :

Question 1

A Write the scientific term of each of the following statements :

1. The change in the position of an object by the time passes relative (according) to the position of another fixed object.
2. The bouncing off the light in the same medium when it meets a reflecting surface.
3. The speed of a moving object relative to a constant (fixed) observer or a moving observer.
4. A lens which is thick at the tips and thin at the middle, and diverges the light rays falling on it.

B Cross out the unsuitable word (or sentence) in each of the following :

1. The image is upright / The image is reversed (laterally inverted) / The image is real / The image is equal to the object in size.
2. The chromatin reticulum condenses / The disappearance of the nucleolus / The disappearance of the nuclear membrane / The split of centromere.
3. Testis / Ova / Ovary / Anther.
- 4 Solar ovens / Front bulbs of cars / The telescopes that monitor the space / Car parking.

C A special car moved from rest and its speed reached to 25 m/s in 10 seconds. Calculate the acceleration with which the car moved.

Question 2

A Choose from column (B), what is suitable from column (A), and rewrite the whole sentence . . .

(A)	(B)
1. Displacement	a. a phase in which the genetic material is multiplied.
2. Centromere	b. the point of connection of the two chromatids of the chromosome together.
3. Distance	c. the covered distance in a constant direction.
4. Telophase I	d. the result of multiplying a speed of a moving object by time.
	e. a phase in which all reproductive cells divide into two cells each of them contains N chromosome.

B Complete the following statements :

1. The double of the distance between the focus of the spherical mirror and its pole is called
2. The theory assumed that the origin of the solar system was the Sun.
3. If you stand at a distance of three meters from a plane mirror, the distance between you and your image in the mirror is meter(s).
4. The Sun was born after about million years from the Big Bang.

C What happens when ... ?

~ A body moves at a uniform speed (according to the acceleration).

Question **D** Put (✓) or (✗) in front of the following statements :

1. The focal length of the thick convex is less than that of the thin convex lens. ()
2. Yeast fungus reproduces asexually by budding. ()
3. The object that is placed at the centre of the curvature of a concave mirror does not form an image. ()
4. The length of the spindle threads decreases in the metaphase. ()

E Choose the correct answer :

1. From the examples of vector physical quantities is the
a. time. b. mass. c. length. d. force.
2. The cell resulting from fertilization process is called
a. tetrad. b. gamete. c. zygote. d. pollen grain.
3. If the uniform speed of a car equals 72 km/h this means that its speed equal m/s.
a. 20 b. 25 c. 18 d. 40
4. If the number of chromosomes in the cells of the pollen grains of a flowering plant is 7 chromosomes, so the number of chromosomes in the cells of root of the same plant is chromosome.
a. 7 b. 10 c. 14 d. 12

F Show by drawing the path of rays that show the formed image for an object located at a distance greater than double of the focal length of a convex lens, then mention the properties of the formed image.

Question 4**A** Correct the underlined words in the following statements :

1. The regular speed is the scalar speed, but in a certain direction.
2. The solar system contains many stars.
3. According to the Big Bang theory, within minutes of the Big Bang, the percent of helium gas in the universe was 75 %.
4. A person moves 70 m northward, then returns 40 m southward, so his displacement is 110 m eastward.

B From the figures in front of you answer what is required below :

(A)	(B)
<p>The opposite figure represents one of the vision defects :</p> <p>1. This person suffers from a vision defect called</p> <p>2. This vision defect is treated with a lens.</p>	<p>The following figure represents a living organism that reproduces asexually.</p> <p>1. Asexual reproduction in this living organism occurs by</p> <p>2. This type of the reproduction depends on division.</p>

C Give a reason for :

Sexual reproduction is a source of genetic variation between individuals.

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Luxor Governorate

Answer the following questions :

Question 1**1** Write the scientific term of each of the following statements :

1. The regular speed by which the object moves to cover the same distances at the same periods of time.
2. The point that lies in the middle of the reflecting surface of the mirror.
3. The physical quantity that has magnitude only and has no direction.
4. A vision defect occurs due to an increase in the eyeball diameter.

B When do the following cases occur ... ?

1. The incident light ray passes through the lens without refraction.
2. Disappearance of the parent cell when it produces new individuals.
3. The light bouncing off in the same medium.
4. Duplicating the amount of genetic material (DNA) in the cell which prepares for division.

Q Two cars (A) and (B) moved with the same speed which equals 30 km/h, if the relative speed of the first car (A) according to a moving observer was 60 km/h and the relative speed of the second car (B) according to the same observer was zero, what is your explanation for the difference in the relative speed of the two cars according to the moving observer ?

Question 2

 **Correct the underlined words in the following statements :**

1. The crossing over phenomenon occurs in the telophase of the first meiotic division.
2. Some cells retain the ability to divide under certain circumstances such as stomach cells.
3. The (speed – time) graph of a regular motion at a constant (uniform) speed is represented by a straight line passing by the origin point.
4. The velocity is the relative speed in a given direction.

B Complete the following statements :

1. The focal length of the thick convex lens is the focal length of the thin convex lens.
2. theory assumed that the origin of the solar system was one big star which is the Sun.
3. The ratio between the length of the object and the length of the image in front of a plane mirror is one.
4. element was the most common element which appears within a minutes after the Big Bang.

C What is meant by ?

Two objects, the first one changes its speed with 5 m/sec. each second and the other object its speed equal zero.

Question 3

A Choose the correct answer :

1. The two factors which can be used to describe the motion of a body are the

- a. speed and time.
- b. distance and time.
- c. area and time.
- d. displacement and speed.

2. in sexual reproduction occurs by mitotic division.

- a. Fertilization
- b. Formation of gametes
- c. Formation of zygote
- d. Growth of zygote

3. An object moves from rest with a uniform acceleration which can be calculated from the relation $a = \frac{20}{t}$ so, the final speed equals
 a. 10 m/sec. b. 20 m/sec. c. 30 m/sec. d. 40 m/sec.

4. The reproduction by budding occurs in unicellular organisms such as ...
 a. yeast fungus. b. mushroom fungus.
 c. bread mould fungus. d. hydra.

B 1. Write the mathematical relation between :

First : the angle of incidence and the angle of reflection.

Second : the radius of mirror curvature and its focal length.

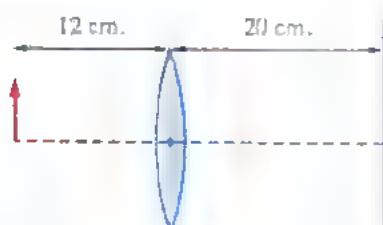
2. "If the number of chromosomes in a starfish mother cell was ($2N$)".

First : what is the number of chromosomes in the produced cells from regeneration ?

Second : what is the type of cell division occurs in the regeneration ?

C In the opposite figure :

an object was put on 12 cm distance from a convex lens, a real, inverted and equal to the object image was formed, then this image falls on a plane mirror away of the lens 20 cm :



- What is the distance between the object and the formed image by the plane mirror ?

- Is the image formed by the plane mirror upright or inverted for the original object ?

Question 4

A What are the results of ... ?

- Decreasing the speed of an object as time passes with reference to acceleration.
- The presence of the attraction force of the Sun according to Fred Hoyle assumptions.
- The movement of an object where it completes one circulation with reference to displacement.
- The nebula lost its heat as time passes according to Laplace assumptions.

B 1. Write the number indicates the following :

First : the number of cells produced from the division of two cells meiotically.

Second : the number of principal axes of the spherical mirror.

2. Explain by drawing :

First : the metaphase in the mitotic cell division.

Second : the path of a light ray that incident on concave mirror passing by its focus.

C What is the relation between the genetic structure of the produced offspring and the parents (with giving the reason) in resulted plant from the germination of seeds ?

Answer the following questions :

Question 1

A Complete the following statements :

1. The image formed by a concave lens always be , upright and smaller.
2. If the speed of a car is 36 km/h, this means that its speed equals m/sec.
3. Long-sightedness is corrected by the lens.
4. If an object moves at negative uniform acceleration, so its initial speed than its final speed.

B What happen in the following cases ... ?

1. When the fusion of male gamete with the female gamete.
2. Putting an object in front of a convex lens at its focus.
3. Starfish losses one of its arms, while it contains a part of the central disc.
4. A light ray is incident by an incidence angle 35° on a plane mirror.

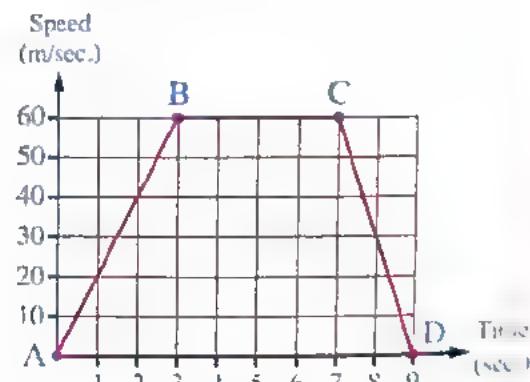
C Study the opposite figure :

Which represents the movement of an object then calculate the value of acceleration at which the body moves in the period (AB).

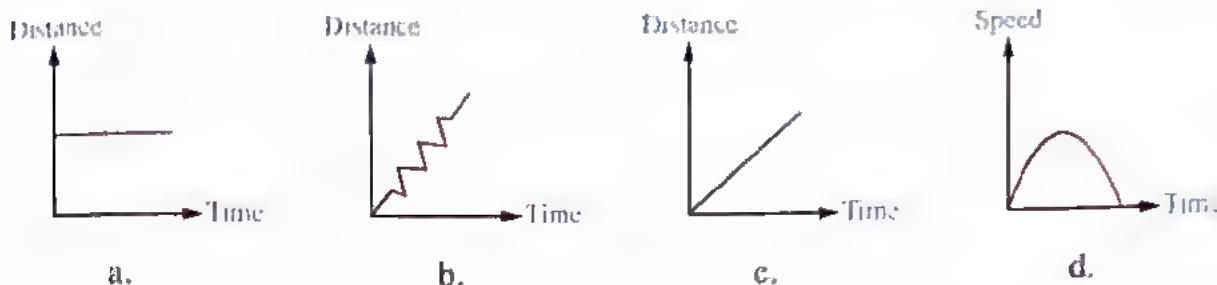
Question 2

A Choose the correct answer :

1. It is possible to produce new plants identical to the mother plant by
 - a. forming gametes.
 - b. fertilization.
 - c. sexual reproduction.
 - d. tissue culture.
2. A car moving on a straight line covers a total distance (d) in a total time (t) the average speed of the car is given by the relation $\bar{V} = \dots$
 - a. $\frac{d}{t}$
 - b. $\frac{t}{d}$
 - c. $d \times t$
 - d. $d + t$
3. The crossing over phenomenon takes place at the end of first from the meiosis cell division.
 - a. metaphase
 - b. prophase
 - c. anaphase
 - d. telophase



4. The graph represents the movement of an object at a uniform speed.



B Choose from column (B), what is suitable from column (A) :

(A)	(B)
1. The focus of concave mirror	a. it is the point of collection of the refracted light rays.
2. The focus of convex lens	b. it contains all the galaxies, stars and planets.
3. Galaxy	c. collects together to form a solar system.
4. Universe	d. it is a point inside the lens lies on the principal axis.
	e. it contains millions of stars including the Sun.
	f. it is the point of collection of the reflected light rays.

C Give a reason for :

A moving object whose final position is the same as the primary position, its value of velocity is equal to zero.

Question 3

A Write the scientific term of each of the following statements :

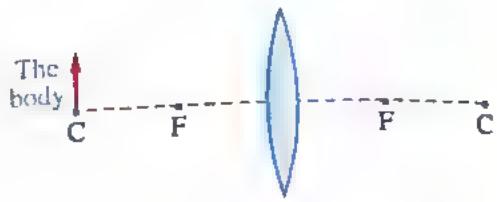
1. The part which is responsible for pulling the chromosomes towards the two poles of the cell during anaphase of cell division.
2. The physical quantity that is enough to identify it determine its magnitude only.
3. Sacs are carried by a lot of fungi and contain a large number of spores.
4. The value of the speed of the moving object relative to a constant or a moving observer.

B Odd un suitable word :

1. A fertilized egg – Gamete – Zygote – Liver cell.
2. Displacement – Force – Acceleration – Time.
3. Amoeba – Paramecium – Mushroom – Euglena.
4. The eye – The magnifying glasses – The solar ovens – The medical eye glasses.

C Copy the opposite diagram in your answer paper then :

1. Draw the path of the rays which form the image of the body.
2. Mention the properties of the formed image.



Question 4

A Correct the underlined words :

1. When the object covers the double of distance at the same time, so its speed decreases to quarter.
2. The solar system is located in one of the oval arms of the milky way galaxy.
3. The speed of car can be identified directly by the compass.
4. The scientist Moulton established the modern theory to explain the origin of solar system.

B Mention the relation between each of the following :

1. The number of chromosomes in somatic cells and the number of chromosomes in gametes in a human body.
2. The radius and the focal length in the spherical mirror.
3. The number of resulting cells in mitosis division and the number of resulting cells in meiosis division in one cell of the human body.
4. The distance of the object to the mirror and the distance of its image to the mirror in the plane mirror.

C The opposite figure shows one of fungus :

1. What is the name of this fungus which the figure represents ?
2. What is the type of its asexual reproduction ?

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Answer the following questions :

Question 1

A Complete the following sentences :

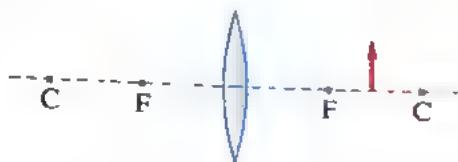
1. The movement path may be , or combination of both.
2. In the process of fertilization, fusion takes place between and to form zygote.
3. If a person moves 60 metre to the north, then return 40 metre to the south so, its distance value and displacement value
4. Spindle fibers appear during the cell division in the and disappear in the

B Cross the odd word out, then find the relation between the others :

1. The time – The mass – The force – The length.
2. Crossing star theory – Big Bang theory – Modern theory – Nebular theory.
3. Equal to the body image – Virtual image – Inverted image – Reversed image.
4. Amoeba – Paramecium – Euglena – Hydra.

C In the opposite figure draw :

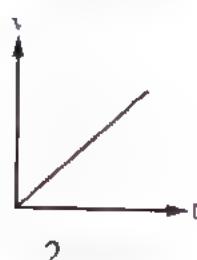
Complete the light rays after drawing it in sheet answer and determine the properties of the image.

**Question 2****A** Write the scientific terms of the following statements :

1. A flat gaseous round disk that formed the solar system.
2. The speed of a moving object relative to a static or moving observer.
3. A point that is in the middle of the reflecting surface of spherical mirror.
4. An area where the two chromatids of the chromosome are connected.

B Complete the following graphs as suitable :

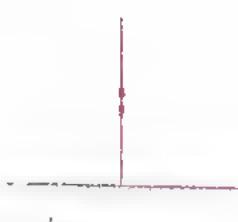
1.



2.



3.



4.

C Give the correct scientific reason :

1. A convex mirror is put at the left side of the driver of the car.
2. Sexual reproduction is a source of the genetic variation.

Question 3**A** Choose the correct answer :

1. The two gases which produced galaxies, stars and universe over millions of years are
 - a. oxygen and helium.
 - b. helium and hydrogen.
 - c. oxygen and hydrogen.
 - d. helium and nitrogen.
2. A spherical mirror whose diameter is 20 cm. its focal length equal to cm.
 - a. 40
 - b. 15
 - c. 10
 - d. 5
3. Starfish reproduces asexually by
 - a. regeneration.
 - b. budding.
 - c. binary fission.
 - d. spores.

4. $\frac{\text{Total distance}}{\text{Total time}} = \dots \dots \dots$
 a. velocity. b. average speed. c. acceleration. d. relative speed.

B Complete the following table :

Points of comparison	Short-sight	Long-sight
The position of the formed image.	..... (1) .....	..... (2)
The type of lens used in correction.	..... (3) .....	..... (4)

C A body moves from rest and its speed reaches 100 m/sec in 10 seconds,
Calculate its acceleration.

Question 4

A Correct the underline words in the following statements :

1. The speed of the car can be identified directly by using the compass.
2. Chromosome is chemically consists of nucleic acid and fats.
3. The solar system lies in Andromeda galaxy.
4. When a moving object covers equal distances in equal periods of time this means that the object moves at negative acceleration.

B If the number of chromosomes in human pancreatic cell 46 chromosomes :

What is the number of chromosomes in the following cells ?

1. Sperm.
2. Skin.
3. Fertilized ovum.
4. Ovary.

C What happens if ... ?

1. The incident light ray passes through the centre of curvature of the concave mirror.
2. Putting a yeast fungus in a warm sugary solution.

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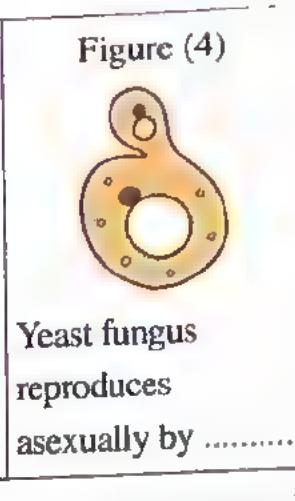
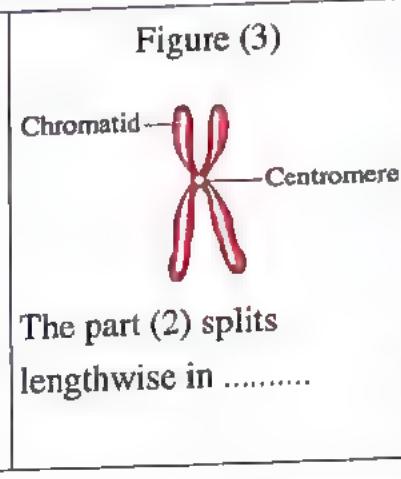
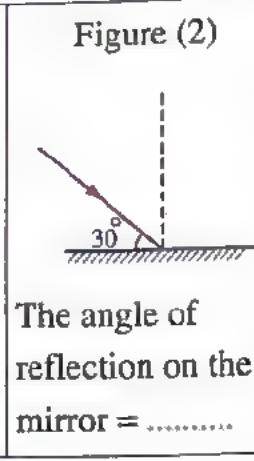
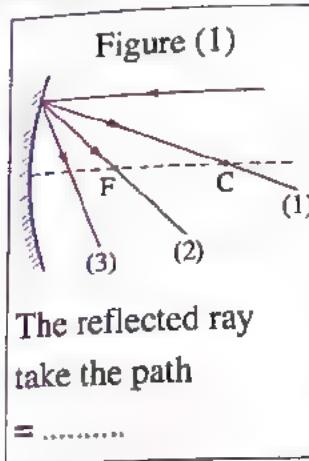
Answer the following questions :

Question 1

A Complete the following statements :

1. The speed of the moving object increases when the time required to cover a certain distance
2. is the physical quantity that characterized by the magnitude only.
3. In the mirror the image is equal to the object and cannot be received on a screen.
4. The point that is in the middle of the reflecting surface of the spherical mirror is called

B Study the following figures, then answer the questions :



C Starting from rest, a ball fell freely from a high place with an acceleration of 9.8 m/s^2 .

- Can its speed reach 35 m/s in the third second from the start of the fall ?
- Explain the steps for the solution.

Question 2

A Write the scientific term :

1. The change of an object's position as time passes according to the position of another object.
2. The actual length of the path that a moving object takes from the starting point of movement to the end point.
3. The phase in which two nuclei are formed each one has half the original number of chromosomes in the parent cell.
4. Asexual reproduction by plant organs without needing seeds.

B Correct the underlined words :

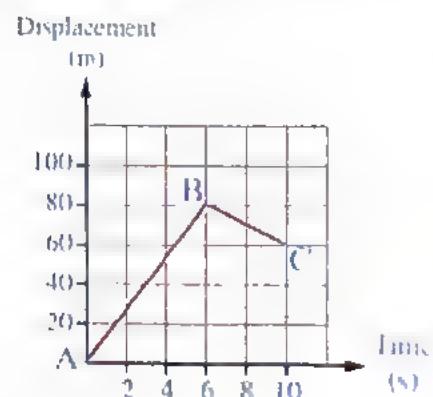
1. The radius of the mirror is equal to its focal length.
2. When an object is placed at the centre of curvature of a concave mirror, the image formed is real, inverted and enlarged.
3. The Sun takes about 320 years to complete one rotation around the centre of the galaxy.
4. The star was exposed to explosion due to huge chemical reactions inside it.

C The following graph represents :

the movement of object from point A to C

passing through the point B :

- Calculate the velocity.
- State when the magnitude of the velocity equals the magnitude of the scalar speed.

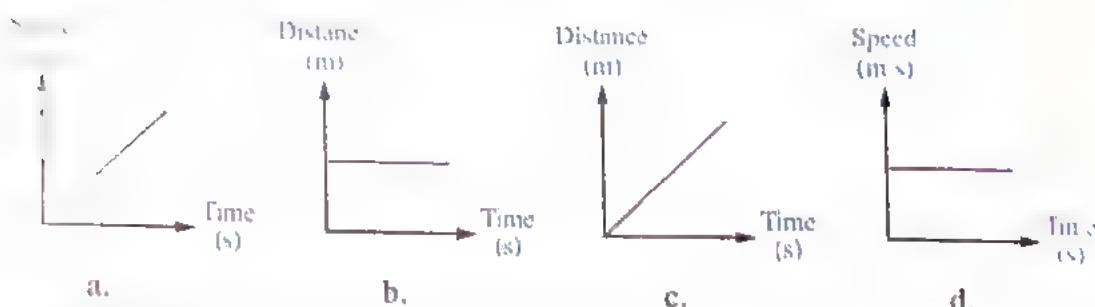


Question 3**A Choose the correct answer :**

1. A car moves in a certain direction by a speed equals km/h, its speed appears 50 km/h for an observer moves with a speed 30 km/h in the same direction of the car.

a. 80 b. 50 c. 30 d. 20

2. The graph represents the motion of an object with uniform acceleration.



3. If each cell of the fruit fly wing contains 8 chromosomes, then the number of chromosomes of the ovary cells is equal to chromosomes.

a. 4 b. 8 c. 16 d. 32

4. In meiosis division the chromosomes are doubled in the interphase.

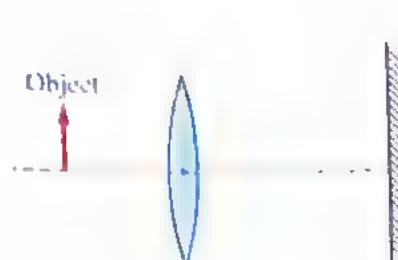
a. once b. twice c. three times d. four times

B Put the sign (✓) in front of the correct answer and the sign (✗) in front of incorrect answer :

1. The concave mirror is placed on the left and right of the driver. ()
2. The decrease in convexity of lens surfaces causes the increase in its focal length. ()
3. The spindle fibers in the plant cell is formed from the centrosome. ()
4. Genetic changes occur in the case of mitosis of cells. ()

C In the opposite figure :

An object is placed in front of a convex lens and put on the other side a plane mirror, when we look in the mirror, we find that no image is formed for the object.



- Mention the position of the object from the lens.
- Show by drawing the path of the rays and the properties of its image.

Question 4

A Answer the following :

First :

The corresponding table shows the results recorded for an object moving at uniform speed.

1. Complete the missing parts in the table.

2. What is the value of acceleration ?

Secondly : Extract the inappropriate word and write what connects the rest of the words :

1. The Crossing star - The Nebula - The Big Bang - The Modern theory.

2. The Sun - Galaxy - Planets - Moons.

B Give one example for each of the following :

1. Living organism that reproduces by regeneration.

2. The male gametes in flowering plants.

3. Optical piece refracts the light.

4. Vision defect which is due to elongation in the radius of the eyeball.

C Explain : The stability of the number of chromosomes in the cells of individuals of the same species that reproduce sexually.

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Answer the following questions :

Question 1

A Write the scientific term for each of the following :

1. The image that can be received on the screen.

2. The change in the position of an object by the time passes relative to the position of another fixed object.

3. The point that lies in the middle of the reflecting surface of spherical mirror

4. The speed of a moving object relative to a constant or a moving observer.

B What are the results based on ... ?

1. Putting a yeast fungus in a warm sugary solution.

2. A kind of living organisms stops reproduction process.

3. A light ray fall by an angle of incidence 60° on a plane mirror.

4. A light ray passes through the optical centre of the lens.

C A car moves from rest and its speed reached 25 m/s in 10 seconds.

Calculate the acceleration.

Distance (m)	Time (s)	Speed (m/s)
40	.....	80
.....	2	80

Question 2

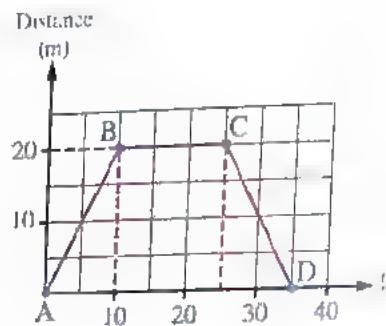
A Put (✓) or (✗) for the following :

1. The object speed decreases by decreasing the time needed to cover a certain distance. ()
2. The number of chromosomes in liver equal to the number of chromosomes in the cell of the ovary of the human female. ()
3. To identify the displacement its necessary to know its magnitude and its direction. ()
4. The spindle fibers are formed by centrosome in plant cell. ()

B Complete the following sentences :

1. The glowing and explosion of the stars as the Sun is due to reactions.
2. A body of length 4 cm is placed at a distance 6 cm from a concave mirror of focal length 3 cm, so the length of the formed image equals
3. theory assumed that the solar system was originally a big star is the Sun.
4. The properties of the formed image by convex lens are different according to the of the object from the lens.

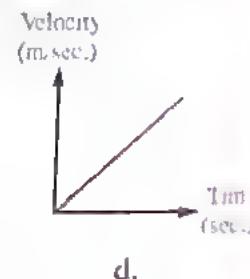
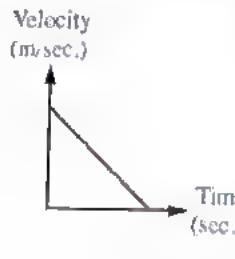
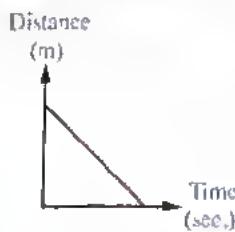
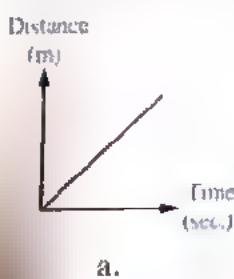
C From the following graph determine the total distance that the object covered through 35 seconds.



Question 3

A Choose the correct answer :

1. A starfish reproduce asexually by
 - a. seeds.
 - b. budding.
 - c. regeneration.
 - d. binary fission
2. If the uniform speed of a car 90 km/h, so its speed equals m/s.
 - a. 20
 - b. 25
 - c. 30
 - d. 40
3. A tetrad consists of
 - a. 2 chromatids, 2 centromeres.
 - b. 4 chromatids, 2 centromeres.
 - c. 4 chromatids, 4 centromeres.
 - d. 2 chromatids, 1 centromere.
4. The graph represents an object moves with uniform positive acceleration.
 - a.
 - b.
 - c.
 - d.



B Choose the odd word or phrase :

1. Amoeba – Paramecium – Sponge – Euglena.
2. Short-sightedness – Decrease the eyeball diameter – Increase the eyeball diameter – Smaller the focal length of the eye lens.
3. Production of sperms – Compensation of the damaged cells – Production of cells identical to parent cell – Growth of living organisms.
4. Concave lens – Inverted image – Diminished image – Virtual image.

C An object is placed at 5 cm from a convex lens of focal length 2 cm.

- Draw a diagram to show the path of the rays that formed the image.
- Mention the properties of the image.

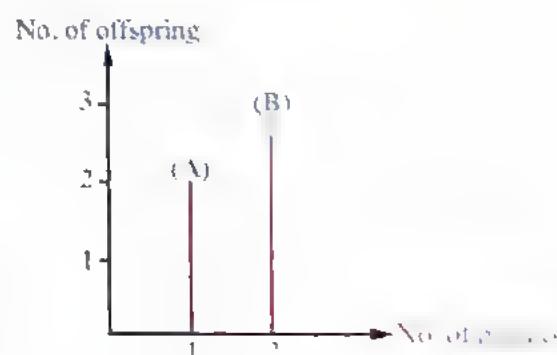
Question 4**A** Correct the underlined words :

1. Eight planets including the Earth rotate around the galaxy.
2. Car is provided with compass to identify its speed directly.
3. According to Big Bang theory the universe is formed by merging of oxygen and nitrogen particles.
4. A person moves 70 meter to the north direction then returned to south 40 meter, its displacement equal 110 meter to east.

B Choose from column (B) what suits it from column (A) :

(A)	(B)
1. The centromere of each chromosome splits lengthwise into two halves in	a. metaphase
2. The chromosomes are arranged at the cell equator in	b. convex mirror
3. Is placed to the left and right side of the car's driver	c. anaphase
4. Used in solar ovens	d. concave mirror
	e. telophase

C The opposite graph represents the relation between the number of parents and number of offspring in two cases of reproduction. What is the type of reproduction in case A and B?



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Answer the following questions :

Question 1

A Complete the following sentences :

1. The force is considered as physical quantity.
2. The ability of some animals to compensate the missing parts is known as
3. The vision defect which is resulted from increasing the convexity of eye lens is
4. The founder of nebular theory is the scientist

B Compare between :

Points of comparison	Somatic cells	Reproductive cells
1. Type of division occurs in cells.
2. Number of chromosomes in the produced cells from division.

C What happens when ... ?

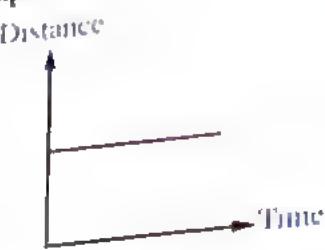
Rupturing of the sporangium of bread mould fungus.

Question 2

A Choose the correct answer :

1. When a moving object takes double the time needed to cover half the distance, its speed
 - a. decreases to half.
 - b. increases to double.
 - c. decreases to quarter.
 - d. remains constant.
2. The solar system is located at one of the arms of Milky Way galaxy
 - a. straight
 - b. spiral
 - c. spherical
 - d. cylindrical
3. The phase in which the cell prepares itself for mitotic division to duplicate the genetic material is
 - a. interphase.
 - b. metaphase.
 - c. telophase.
 - d. prophase.
4. If the angle between the reflecting surface of the plane mirror and the reflected light ray is 140° , so the angle of incidence equals
 - a. 140°
 - b. 80°
 - c. 50°
 - d. 70°

B 1. Describe the object's motion in the following graphs :



a. The object

b. The object

2. If the number of chromosomes in a pancreatic cell of a human is 23 pairs of chromosomes what is the number of chromosomes in the following cells ?

a. A sperm
b. A muscular tissue cell

C Give a reason for :

The object which moves with a regular speed the value of its acceleration equals zero.

Question 3

A Correct the underlined words :

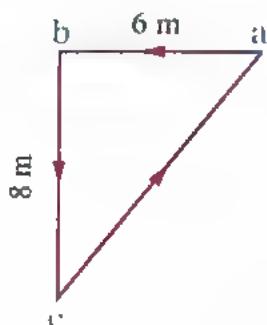
- When an object moves in a circular path its radius (r) to cover a distance equals (πr) , so the value of its displacement equals $2\pi r$.
- When an incident light ray passes by the optical centre of a convex lens, it passes by the focus.
- Bacteria reproduces asexually by budding.
- The two gases which produced galaxies, stars and universe over millions of years are hydrogen and oxygen.

B In the opposite figure a body starts its movement from point (a) westward to point (b) to cover 6 meters, then southward to point (c) to cover 8 meters, then returned back to point (a) calculate :

- The value of covered distance =
- The value of covered displacement =

C What is meant by ?

The radius of a lens = 10 cm



Question 4

D Write the scientific term for each of the following :

- An imaginary point at the middle of the reflecting surface of the spherical mirror.
- The point of connection of the two chromatids of chromosome together.

3. The actual length of the path that the moving object takes from the starting point of movement to the end point.

4. The phenomenon of exchanging parts between the inner chromatids of tetrad.

B A concave mirror its focal length is 15 cm.

1. Explain by drawing only how the image is formed for an object is put in front of it at a distance equals the double of its focal length.
2. Mention the properties of the formed image.

C Before the train enters the station, the driver used the brakes to stop it, the train stopped after 25 seconds from pressing the brakes, calculate the speed of the train when the brakes is applied if you know that train moves with regular deceleration equals 2 m/sec^2 .

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Answer the following questions :

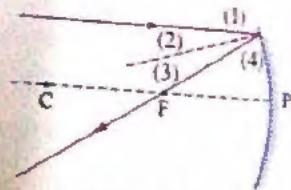
Question 1

A Complete each of the following :

1. The body moves 15 m east, then in the opposite direction 10 m west, so the distance equal metre, and the displacement equal metre to the east.

2. In the opposite figure :

number represents the angle of incidence and number represents the angle of reflection.



3. The chromosome consists of two connected threads at the , each is called
4. The Big Bang theory explains the origin of , while the Nebular theory explains the origin of

B Choose from column (B) what suits it from column (A) :

(A)	(B)
1. The spindle fibers shrink and two identical groups of chromosomes are formed at each pole of the cell in	a. telophase
2. Duplication of genetic material occurs in	b. prophase
3. The nucleolus and nuclear membrane disappear in	c. interphase
4. The chromosomes are arranged along the cell equator in	d. metaphase
	e. anaphase
	f. metaphase I

C A train moves with a speed 20 m/s and when using the brakes it moves with a negative acceleration 4 m/s^2 , calculate the time required to stop the train?

Question 2

A Choose the correct answer:

1. If the relative speed of a car is 20 km/hour relative to an observer moves at speed of 40 km/hour in the same direction, so the actual speed of this car is km/hour.
a. 20 b. 40 c. 60 d. 80
2. reproduction is a source of genetic variation.
a. Budding b. Regeneration c. Sexual d. Asexual
3. If the distance between the two centres of curvature of the lens is 20 cm. This means that the focal length is
a. 5 cm b. 10 cm c. 15 cm d. 20 cm
4. The body between the focus and centre of curvature of the concave mirror its image is
a. real diminished. b. real magnified. c. virtual magnified. d. virtual diminished.

B Compare between each:

1. Bread mould fungus and sponge. (in term of way of reproduction)
2. Short-sightedness and long-sightedness.
(The position of the images concerning the retina)
3. Force and mass. (types of physical quantities)
4. Mitotic division and meiotic division. (in term of the cells in which they occur)

C When do the following cases occur ... ?

1. The distance covered by a body equals the amount of its displacement.
2. Reflection of light ray falls on spherical mirror of itself.

Question 3

A Write the scientific term for each of the following:

1. Asexual reproduction occurs by different parts of the plant without needing seeds.
2. The actual length of the path that a moving object covers from the starting point to the ending point.
3. An optical piece which usually gives reversed and equal size image.
4. The acceleration by which an object moves when its final speed is more than its initial speed.

B From the opposite figure :

In which position from (1) to (4)

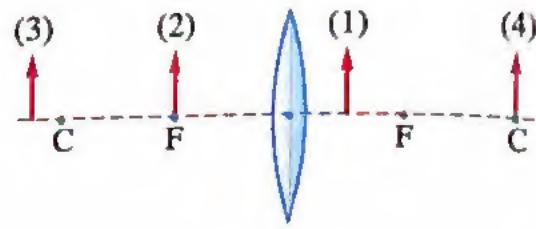
suitable to put the object to form :

1. Real, inverted and diminished image.

(draw direction of rays).

2. Virtual, upright and enlarged at the same side of the object.

3. No image.

**C** Give reasons for :

1. The explosion of some stars suddenly.

2. It is difficult to obtain constant speed practically.

Question 4**A** Correct the underlined words in the following statements :

1. When an object moves at acceleration equal zero this means its speed is irregular.

2. The old stars gather in the edges of the galaxy.

3. In the rabbit cells, the spindle fibers are formed from condensing the cytoplasm at the cell poles.

4. In the opposite figure an object moves Eastward from point (a) to point (b) during two seconds, then to point (c) Northward in 3 seconds, so its velocity through that period is 1.4 m/sec.

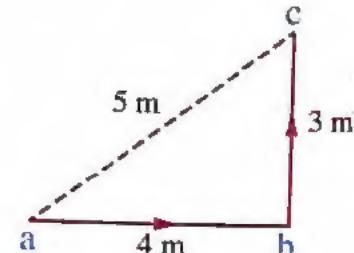
B (I) Arrange each of the following :

1. 50 m/sec, 70 km/hour, 9 km/min.

ascendingly according to speed

2. Milky Way galaxy, The Earth, Solar System.

ascendingly according to the size.

**(II) Choose the odd word :**

A. Crossing over phenomenon – Chromatin reticulum condenses and double strings chromosomes – nucleolus disappear – The centromere of each chromosome splits lengthwise into two halves – Spindle fibers are formed.

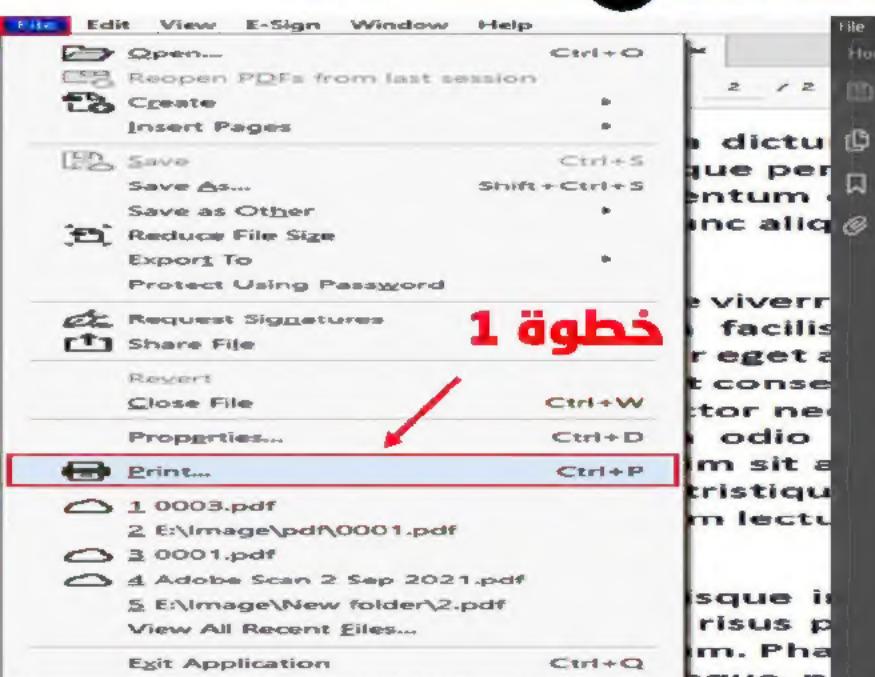
B. Cells of skin – Cells of liver – Cells of kidney – Cells of ovum.

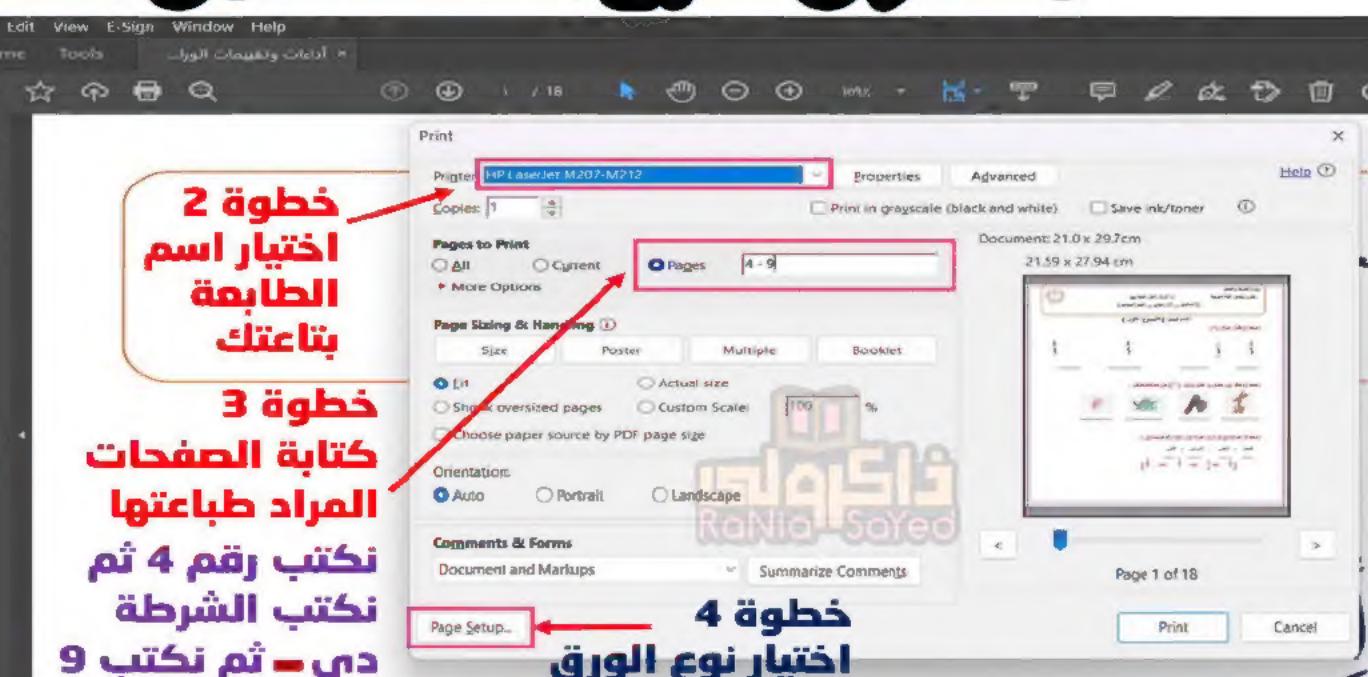
C What happens if ... ?

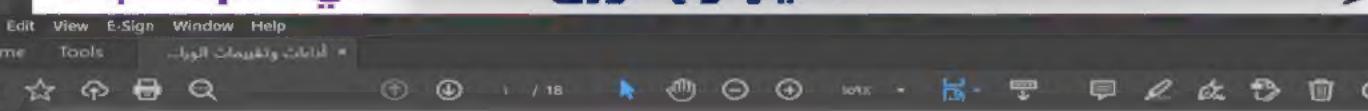
1. Person suffers from short-sightedness and use glasses of concave lens.

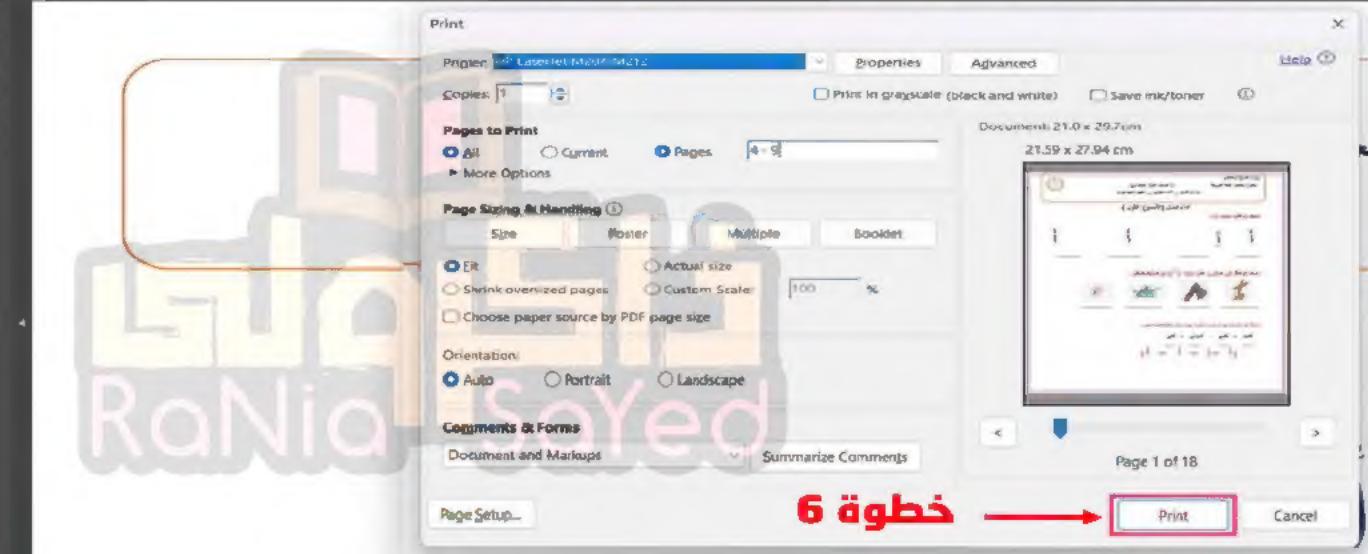
2. A body is placed in front of convex mirror.

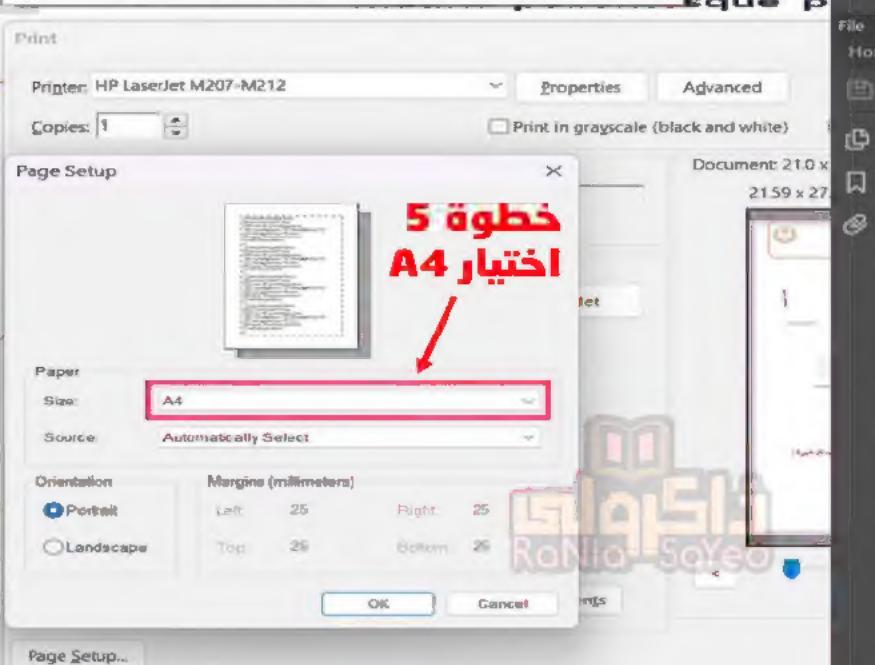
كيفية طباعة صفحات معينة من ملف معين مثل ازاي نطبع الصفحات من صفحة 4 الى صفحة 9

خطوة 1 

خطوة 2 اختيار اسم الطابعة بناعتك 

خطوة 3 كتابة الصفحات المراد طباعتها 

خطوة 4 اختيار نوع الورق 

خطوة 5 اختيار A4 

خطوة 6 